INSTRUCTION BOOK

Memo-Matic*

Punchcard knitter with
'Magic Point' motif making by **SINGER**

We thank you for purchasing our Knitting Machine Model 327

Before starting to knit on this machine, we recommend you carefully reading this Instruction Book. By using these "Easy-to-Follow" directions, you will be able to take full advantage of the excellent performance of this machine.

For the Model 329 Knitter, the Knit Contour, Pattern Paper and Stitch Scale Set are not included.

To move carriage to opposite side without taking knitting off, pull side levers to front, unhook yarn, move cam lever to slip position & gently move carriage across.

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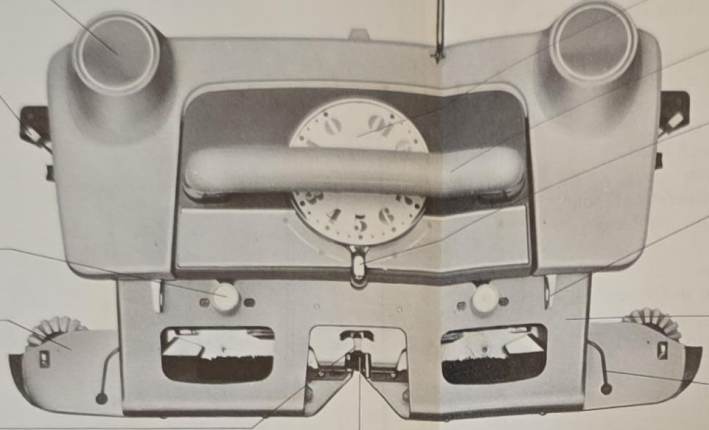
* CARRIAGE *



Row Counter Lever
A lever for advancing the Row Counter.

Memory Bank
The memory bank is installed inside the Carriage Cover.

Side Lever
The Side Levers have two positions.
● For moving the Carriage without knitting.
▲ For Stockinet and pattern knitting.

Arm Nut

Fabric Presser
This prevents the knitting from coming up or floating.

Yarn Guide

Stitch Dial
This dial is used for adjusting to the weight of yarn for the size of the stitches. By adjusting this dial a wide variety of yarns from very fine yarn to bulky yarns can be knitted.

Handle
The handle is foldable and ready for use when raised. It is very easy to pack away.

Cam Lever
By setting this lever to a desired position on the Carriage, the pattern stitches can be worked simply by moving the Carriage back and forth.

Russel Lever
I.....With the Russel Lever in this position the needles placed in B and C position knit while those placed in D position do not knit.
II.....This position is used when knitting the needles placed in D position.

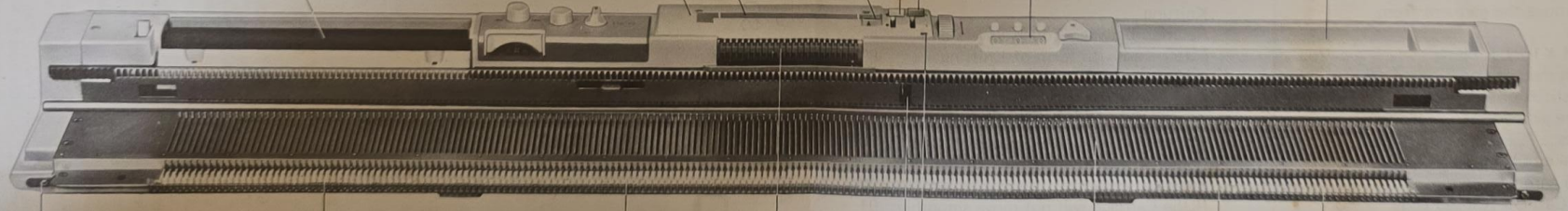
Carriage Arm
When the Carriage jams remove the Carriage Arm and the front of the Carriage can be lifted to be moved freely.

Yarn Holder
In weaving, the yarn to be woven is hooked here.

Yarn Gate
Separate the yarn in Yarn Feeder 1 from that in Yarn Feeder 2. Open the Yarn Gate towards you to thread the yarn into the Feeder 1.

* Carriage Covers, Indicators, and Brand Marks are covered with plastic films to protect the machine from scars in packaging and in transit. You may peel off the films with your finger nails before using the machine.

* MAIN BODY OF KNITTING MACHINE *



Stop Knob
▲ ..... The Punch Card is automatically fed.
● ..... The feeding of the Punch Card is stopped. (The arrangement of the Touch Lever indicates the pattern on the Punch Card.)

Read the row number appearing here.

Punch Card Insertion Slit

Center Panel (Pattern Panel)

Knit-Contour

L Knob
S.....Punch Card is fed with every stroke of the Carriage.
L .....Punch Card is fed with every other stroke of the Carriage.

Accessory Tray

Row Counter

Ravel Cord Holder
This clip holds the Ravel Cord for casting on.

Pattern position marks
At every twenty fourth needle there are marks X and ◇ to make it easier to find the position of a pattern which is repeated at every twenty-fourth needle.

Needle Number Mark

Touch Lever

L Indicator
The Blue colour appears when the L Knob is positioned at S.
Blue and Red colours appear alternately when the L Knob is positioned at L.

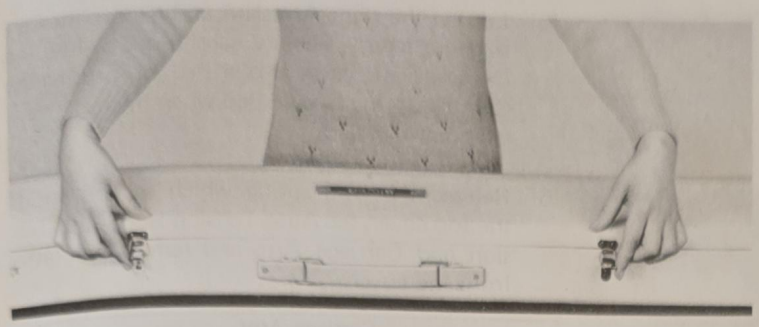
Feed Lever

Needle Bed

Sinker

Needle

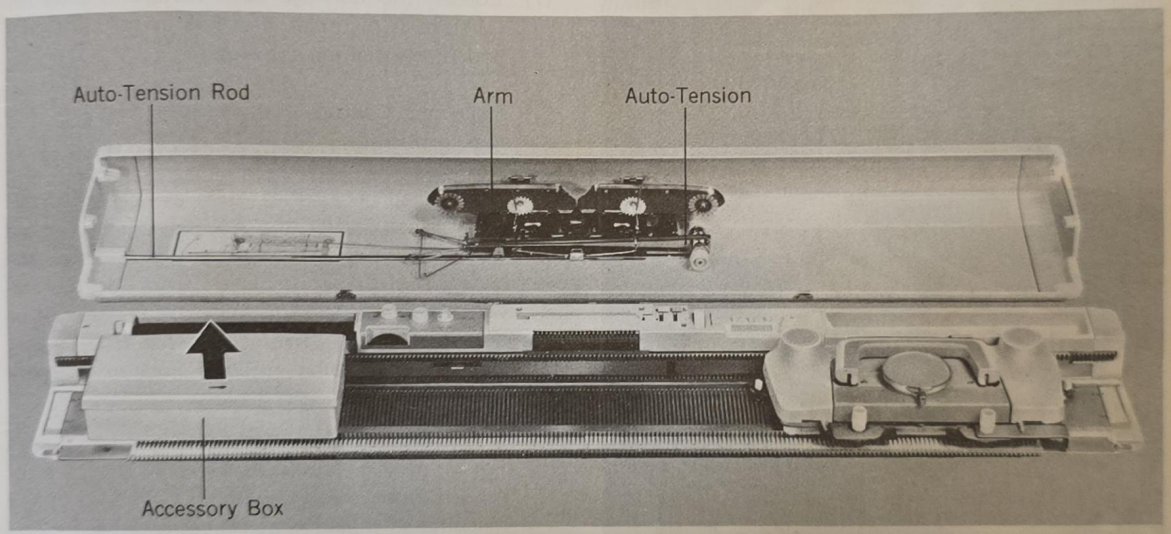
I. ASSEMBLING PROCEDURE

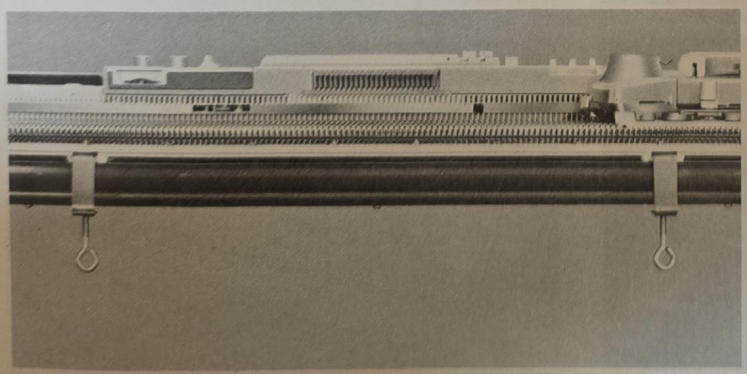


(1) Place the machine on a table with the handle on your opposite side and unfasten the latches.

(2) Lift the upper case slightly and pull the cover towards you to free it from the machine. (The Arm, Auto-Tension Rod and Auto-Tension are housed in the Top Cover.)

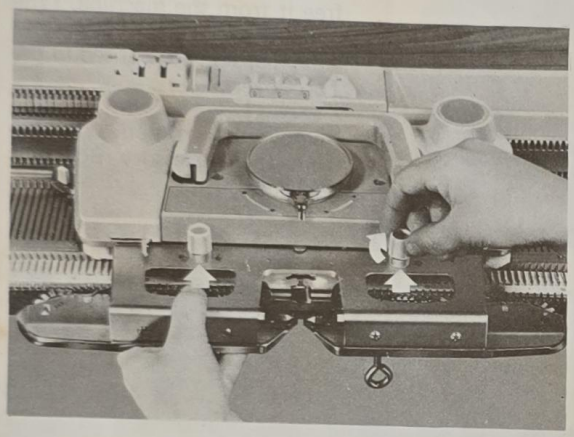
(3) Remove the protective packing from the Accessory Box and Carriage.

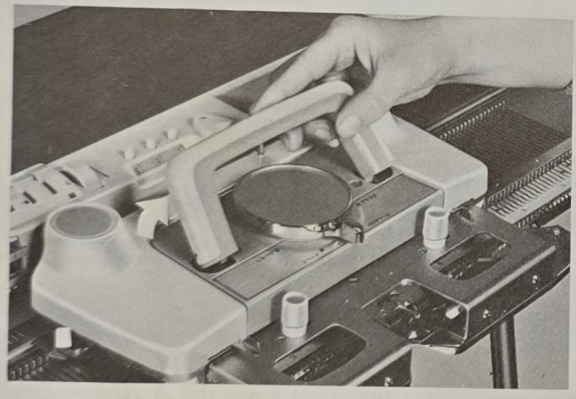


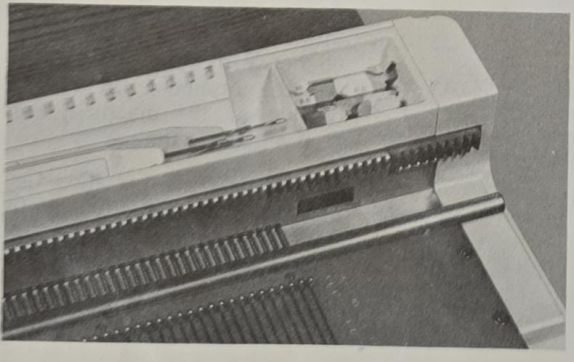


(4) Take from the Accessory Box the two clamps and insert them into the slots, which are situated between the Foot Rubber and the Casement, on the underside of the machine, and secure them to the table.

Rubber feet are provided underneath the machine so it will not slide on the table when the clamps are not used.

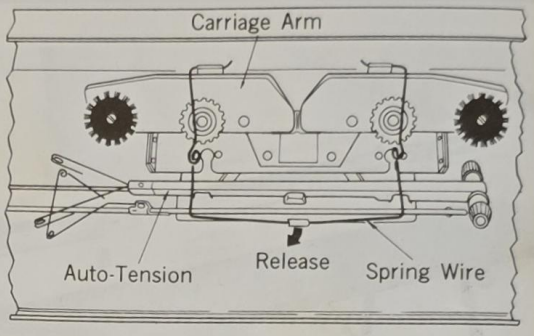






(5) Loosen the right Arm Nut and remove the Carriage Fastener. (Be very careful not to lose the Carriage Fastener, as this is used for securing the Carriage to the Needle Bed when the machine is stored or handled.)

(6) Release the wire spring which secures, inside the top cover, the Auto-Tension Rod, Auto-Tension and Carriage Arm and remove the latter from the cover.

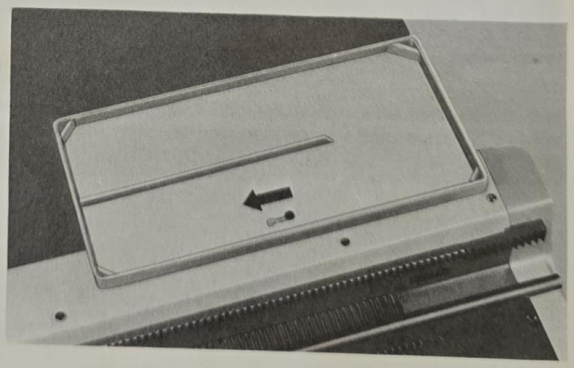


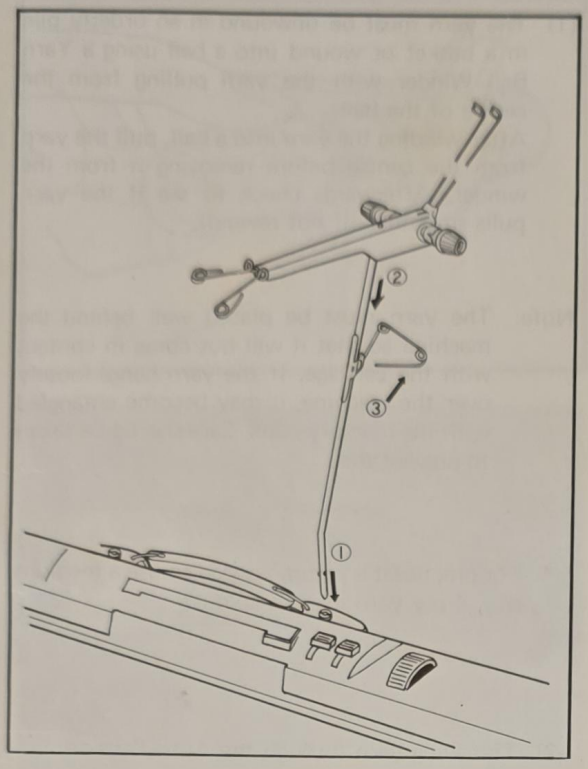
(7) Loosen the Carriage Arm Nuts and slide the Carriage Arm under the nuts as far as it goes and firmly tighten the nuts.

(8) Raise the Carriage Handle until it stands in a locked position.

(9) Keep small accessories, such as Transfer Tools and Tappet, etc., in the Accessory Tray, on the right side of the machine. Be careful that the accessories do not protrude from the tray towards the needle bed, especially in the case of the Ravel Cord. This is a precaution against the cord becoming entangled in the memory bank of the carriage.

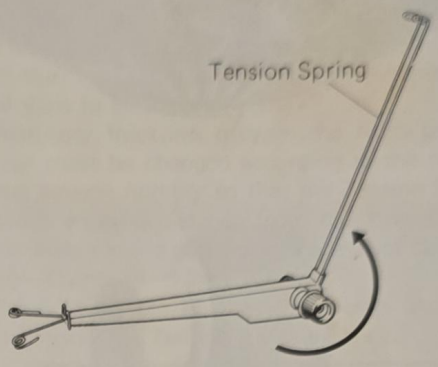
(10) For Model 329, install the cover of the Accessory Box onto the screw at the right end of the machine so that it may serve as an Accessory Tray.



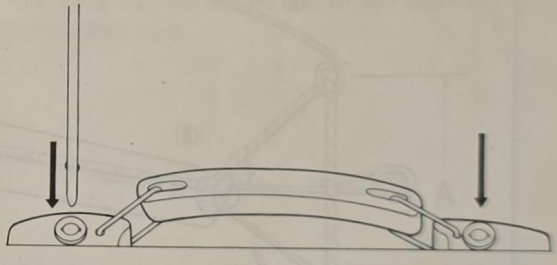


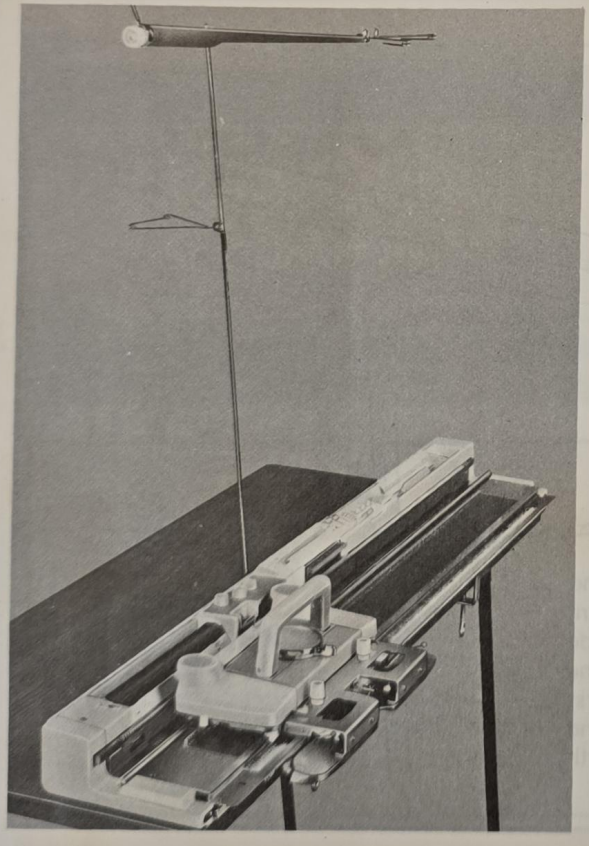
(11) Install the Auto-Tension in the order indicated in the diagram opposite.

* The Tension Spring must be turned until it comes to a stop, making a clicking sound.



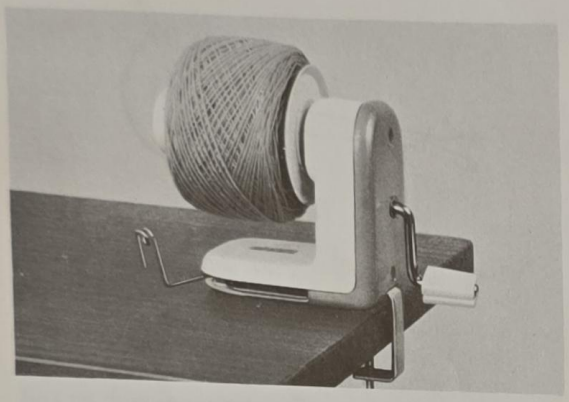
The Auto-Tension Rod can be installed on either side of the case handle. By using an additional Auto-Tension Complete (sold separately) you can knit four different coloured yarns without having the bothersome task of changing the yarns each time you wish to knit in a different colour.





The photograph on the left shows the machine ready for knitting.

2. PREPARATION FOR KNITTING

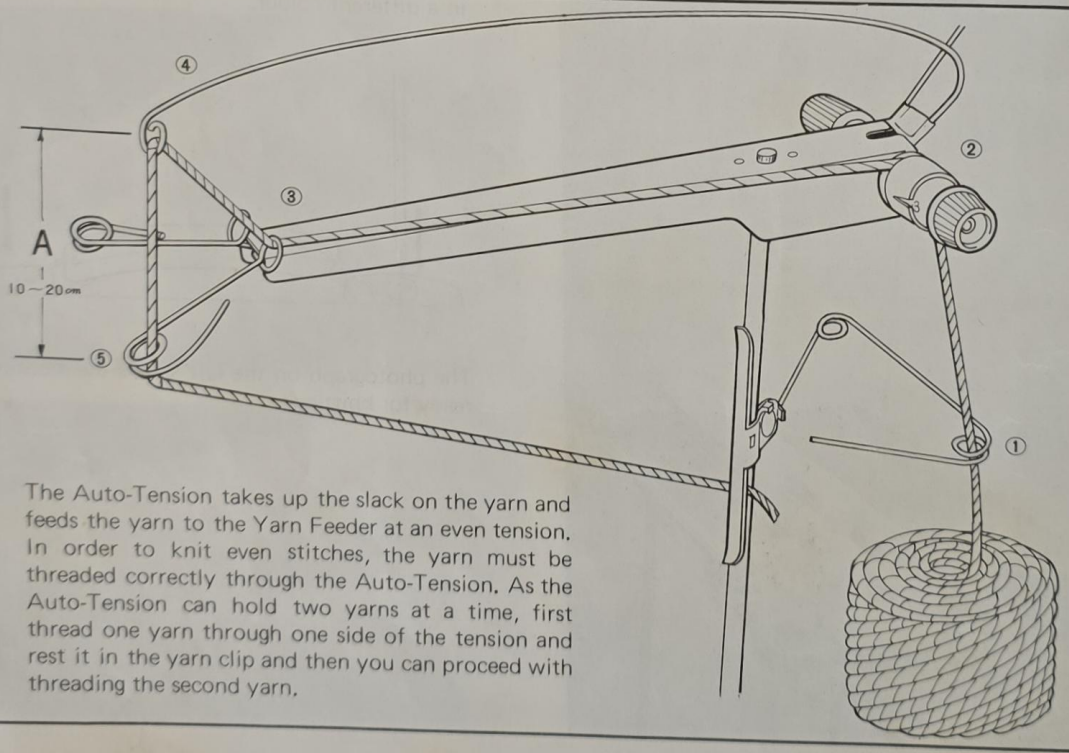


(1) The yarn must be unwound in an orderly pile in a basket or wound into a ball using a Yarn Ball Winder with the yarn pulling from the centre of the ball.
After winding the yarn into a ball, pull the yarn from the centre before removing it from the winder. Afterwards check to see if the yarn pulls smoothly (if not rewind).

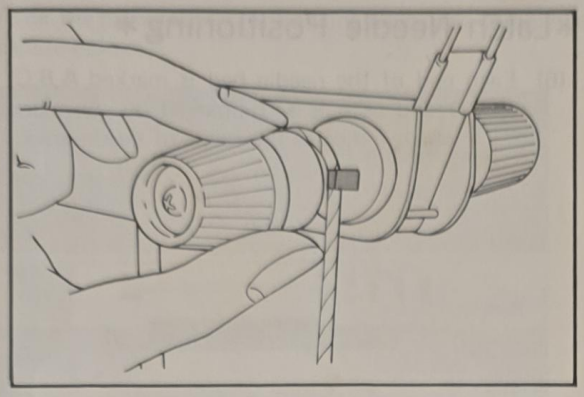
Note: The yarn must be placed well behind the machine so that it will not come in contact with the carriage. If the yarn hangs loosely over the machine, it may become entangled with the memory bank. Care should be taken to prevent this.

* For practice it is recommended to use a medium size, 4 ply yarn in light colour.

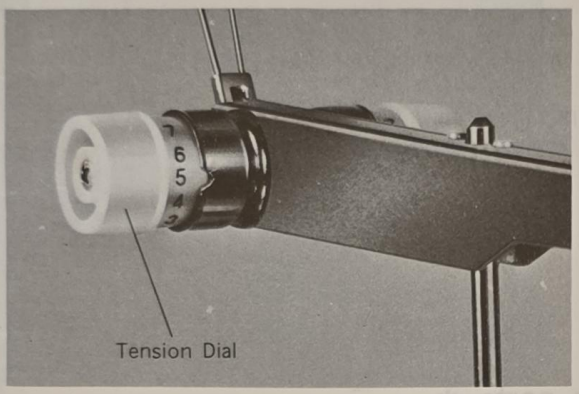
(2) Threading yarn through the Auto-Tension:



The Auto-Tension takes up the slack on the yarn and feeds the yarn to the Yarn Feeder at an even tension. In order to knit even stitches, the yarn must be threaded correctly through the Auto-Tension. As the Auto-Tension can hold two yarns at a time, first thread one yarn through one side of the tension and rest it in the yarn clip and then you can proceed with threading the second yarn.

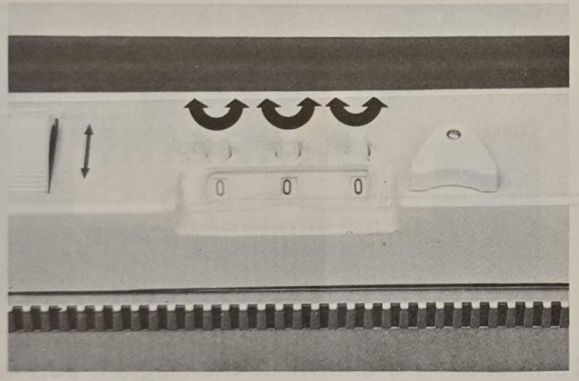


* Be sure that the yarn is threaded under the copper coloured guide pin.



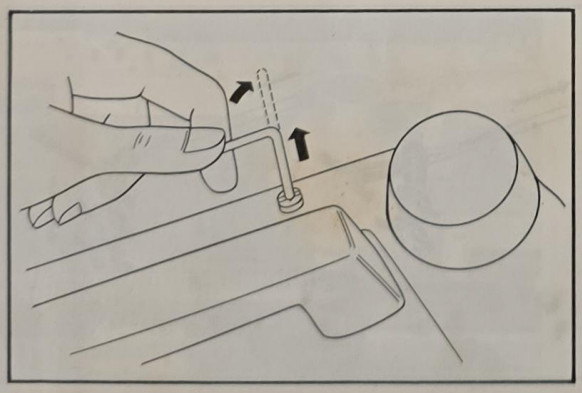
(3) Turn the Auto-Tension Dial to set the number to the > shaped cut according to the thickness of yarn to be knitted.
With any thickness of yarn the Auto-Tension Dial must be changed according to the respective tension number so that the Tension Spring keeps an even distance from the Yarn Guide, (as shown in the diagram on Page 4) of between 10–20 cms. (4–8 ins.)
Below is a table of yarn thicknesses and their corresponding Tension Dial numbers.

Fine Yarn Nylon Thread	6–7
Thin Yarn	4–5
Medium Yarn	3
Heavy Yarn	1–2



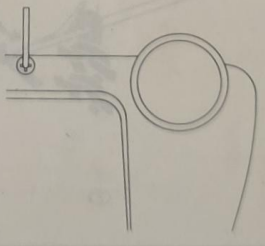
*Row Counter *

(4) The Row Counter can be adjusted by turning the three knobs, on the top of the counter, in either direction.

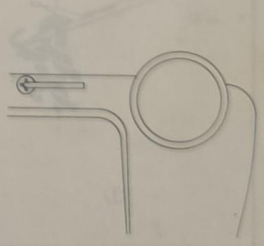


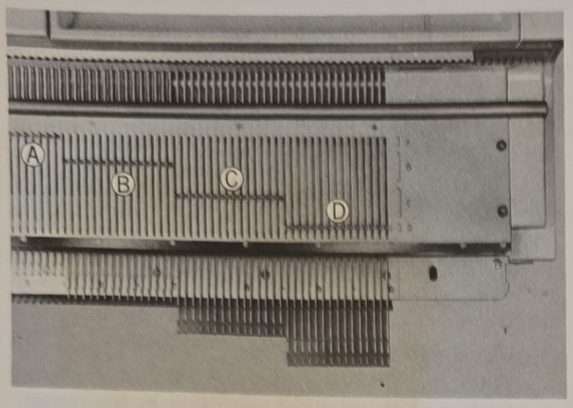
(5) The Row Counter Lever is installed on the Carriage. When the Row Counter is to be used, lift the lever upwards and then turn it forwards.

If the Row Counter is in use:



If the Row Counter is not in use:



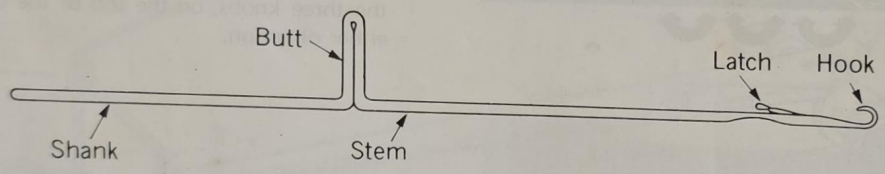


Latch Needle Positioning

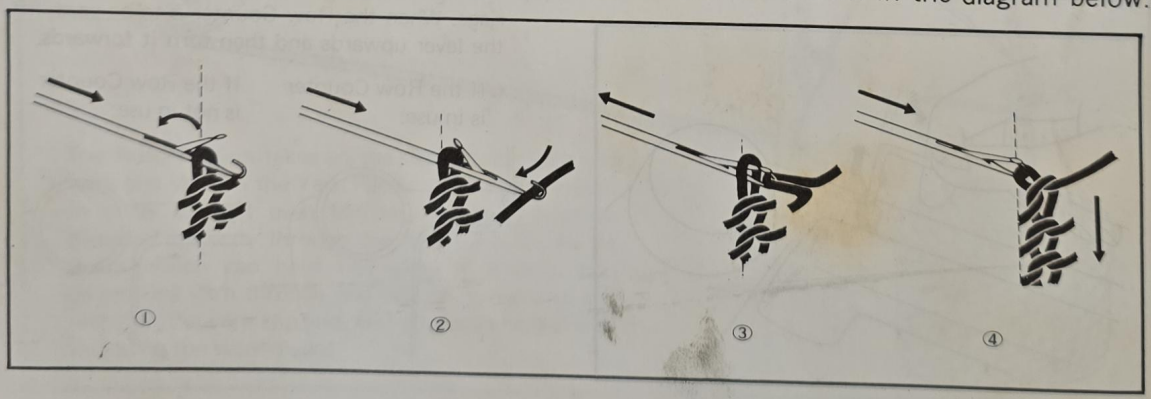
(6) Each end of the needle bed is marked A,B,C, and D and each is accompanied by the mark "[" which indicates the range of needle selection.

A position.....The needles in this position do not operate when the Carriage is moved across the needle bed.
B position.....On most occasions the needles are positioned at B for Stockinet and pattern knitting.
C position.....The needles knit in this position at all cam settings.
D position.....The needles are set in this position for partial knitting and working patterns manually.

The Latch Needle and names of its parts.

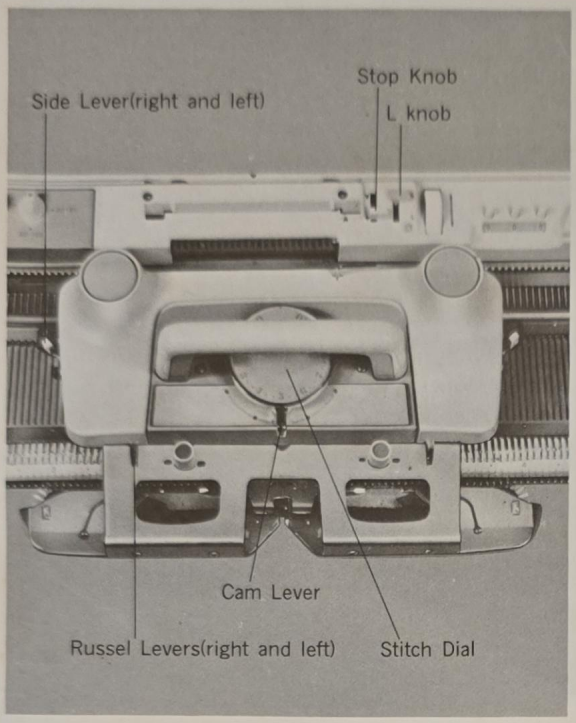


The stages that a needle goes through to knit one stitch are shown in the diagram below.



3. CASTING ON AND STOCKINET KNITTING

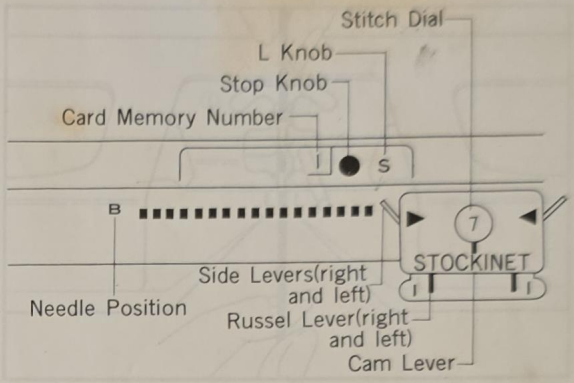
After the preparations for knitting have been completed, you can begin knitting with yarn following the procedure below:

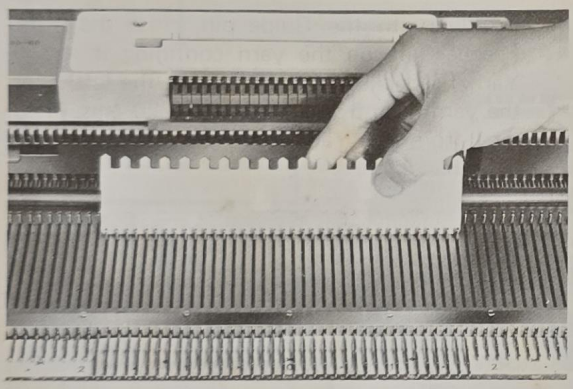


(1) Set the Stop Knob and each part of the Carriage as follows:—

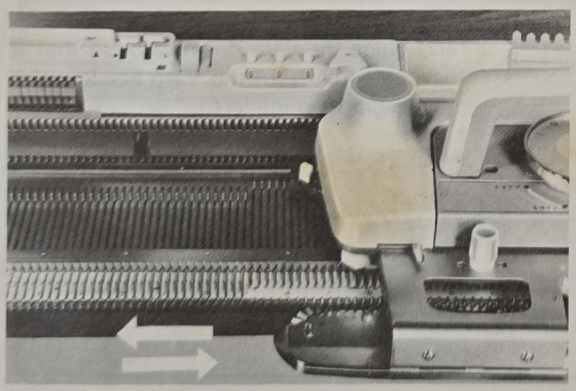
Stop Knob.....● mark
L Knob.....S mark
Cam Lever.....Stockinet
Stitch Dial.....7 (for 4 ply yarn of medium thickness)
Side Levers.....▲ mark (Both)
Russel Levers.....I (Both)

* The Stop Knob should be set directly on the ● mark. (Do not position it half way.)

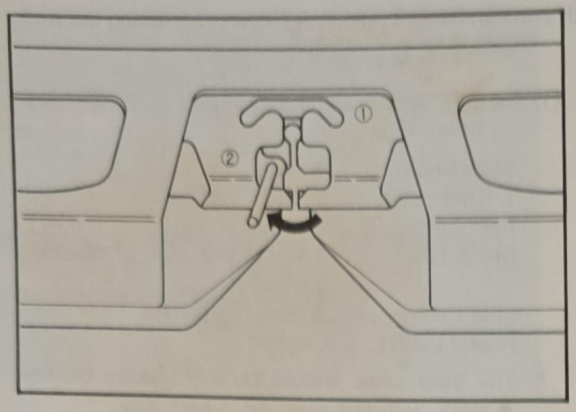




(2) Select and bring the required number of needles to B position, using the smooth side of the Needle Pusher, according to the width of the knitting desired. (Using 0 as the centre of the needle bed bring exactly the same number of needles, to B position, on both the right and left side of 0.)

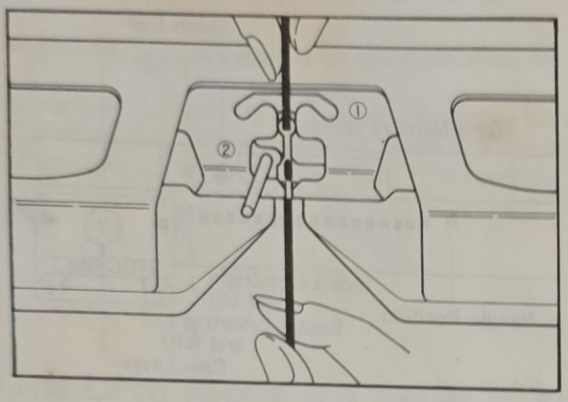


(3) Move the Carriage slowly from side to side across the needle bed to line the needles in B position, leaving it on the right side of the needle bed.

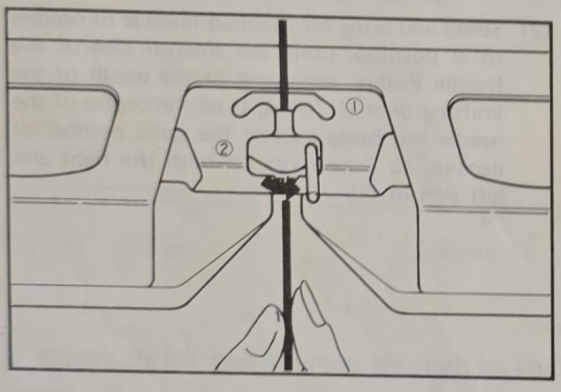


(4) Threading the Yarn Feeder:

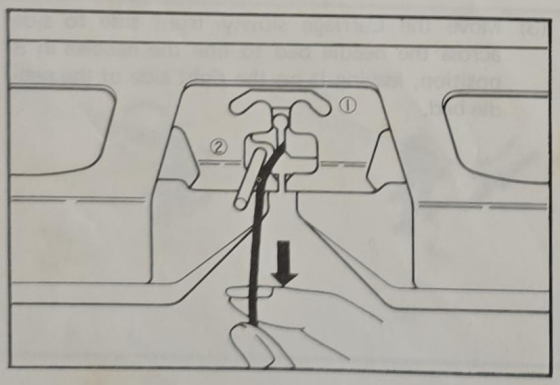
Open the Yarn Feeder Gate as shown in the diagram on the left.



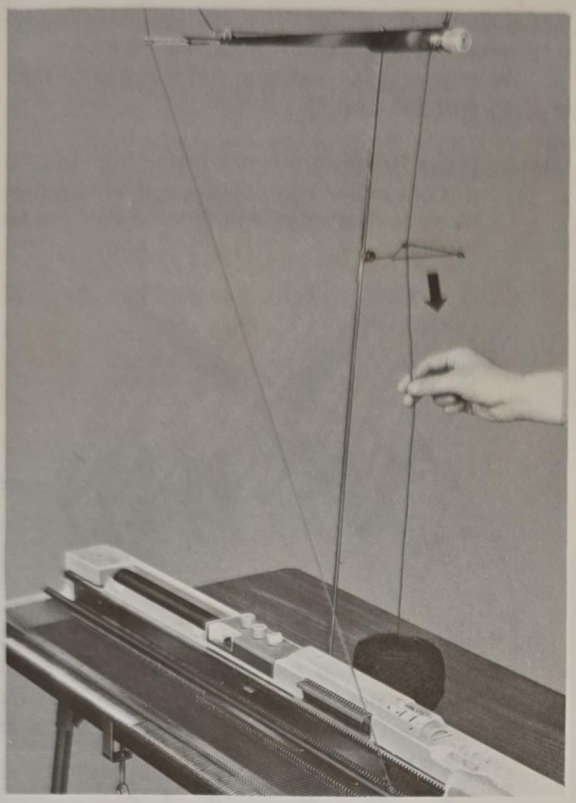
Next, using both hands, pass the yarn through the opening up to the round hole in Yarn Feeder No. 1.



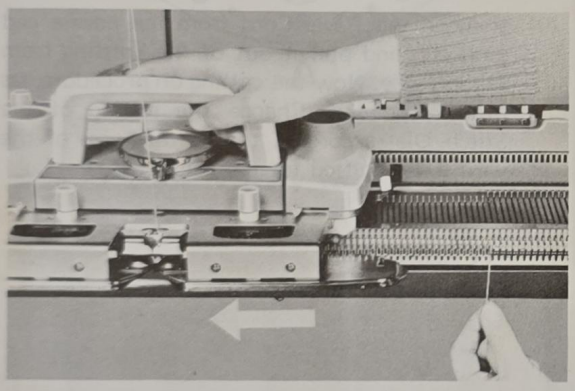
Finally, with the Guide pin, close the Yarn Feeder Gate on the yarn confining it in the Yarn Feeder (see the diagram on the left). Let the yarn hang from between 10–20 cms. (4–8 ins.) from the Yarn Feeder and hold it with your hand.



* How to unthread: Open the Yarn Feeder Gate and guide the yarn downwards so that it becomes free from the Yarn Feeder. (See the diagram on the left.)

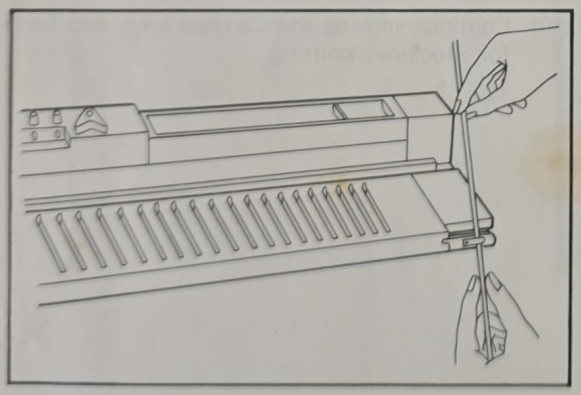


* At this time, the yarn which is threaded through the Yarn Feeder should have tension on it. If the yarn is loose, pull it from the back through the Auto-Tension to give it proper tension.

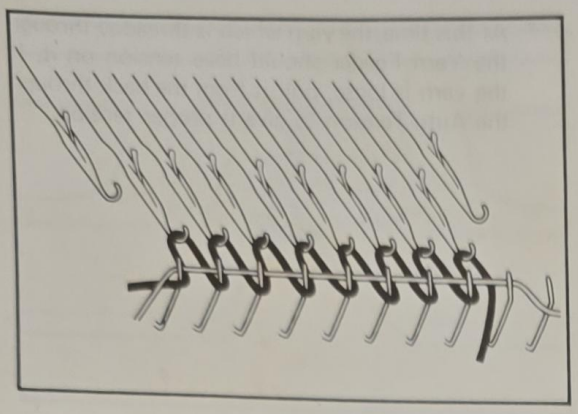


(5) Move the Carriage slowly to the left across the needle bed, and the yarn will be hooked alternately by the needles and sinker posts.

Note: If the yarn on the last few needles is pulled tight, loosen the yarn from the feeder and push the needles back to B position one by one starting from the tightest stitch farthest from the Carriage.

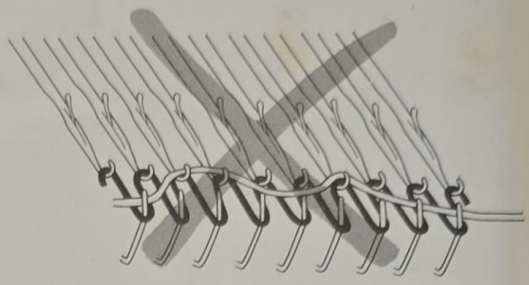


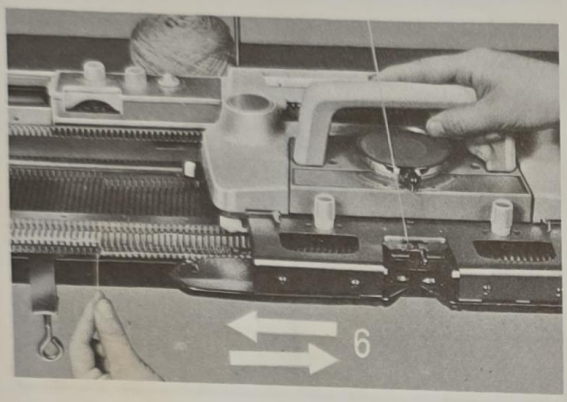
(6) Place the Ravel Cord, about 15 cms. from its end, into the yarn clip situated on the right end of the needle bed.



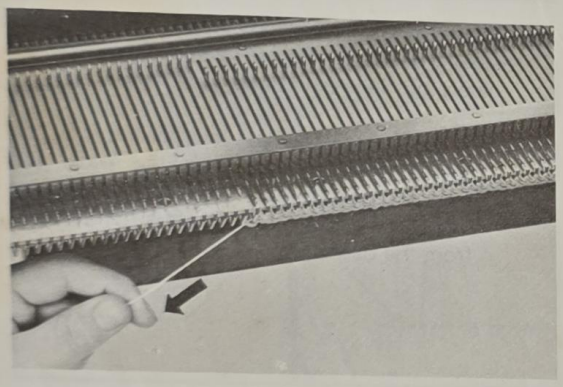
(7) Lay the Ravel Cord over the knitted yarn between the needles and the Sinker Posts. With your left hand, pull the Ravel Cord tight so that the cord lays straight.

Note: If the Ravel Cord is not laid correctly, or if it is not pulled tightly enough, it will become loose as illustrated and stitches will not be formed.

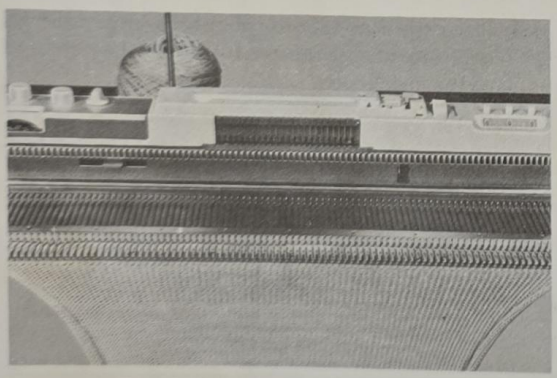




(8) Keep the Ravel Cord tight with your left hand and slowly move the Carriage back and forth across the needle bed knitting a total of six rows. The Carriage should be on the left side at the end of this procedure.



(9) Remove the Ravel Cord from the needle bed yarn clip and pull it out of the knitting from the left side. Now the casting on procedure has been completed. Change the setting of the Stitch Dial according to the thickness of the yarn to be knitted for the actual garment.

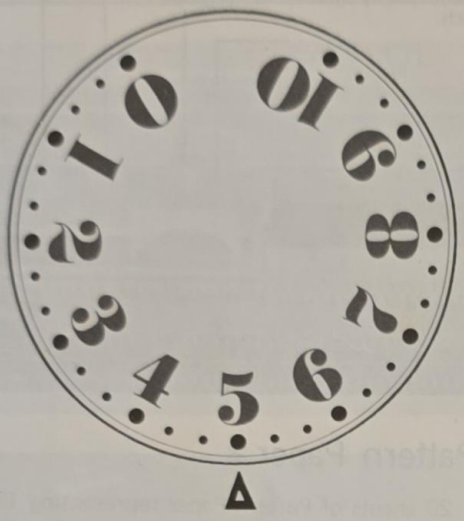


(10) Continue moving the Carriage back and forth for Stockinet knitting.

Notes: If the Carriage has jammed and its movement is prevented, DO NOT try to move it by force. Follow the instructions given on page 86 "IF THE CARRIAGE HAS JAMMED WHILE KNITTING", and repair the knitting if necessary.

* Once the Carriage has been moved across the needle bed, it should be returned only when a clicking sound is heard which comes approximately 3–4 cms. passed the end needle on the Carriage side.
* Do not try to return the Carriage after beginning a row and before finishing the pass.

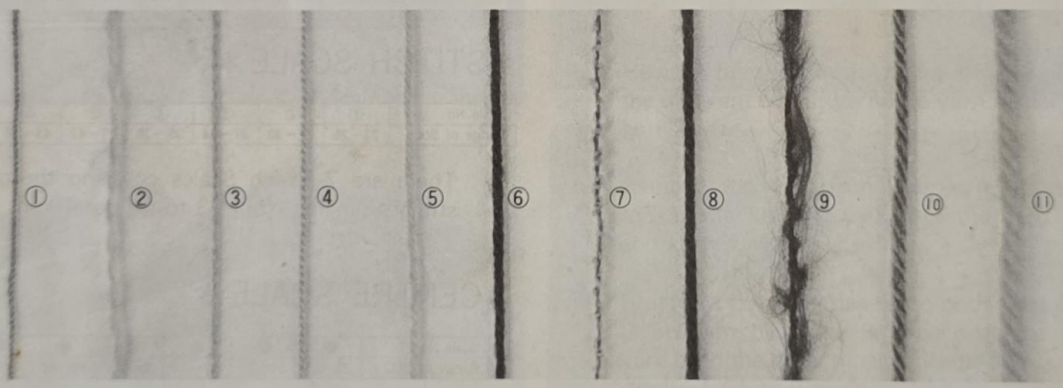
*The relation between the Stitch Dial and yarn *



Note: For heavy or bulky yarn use every other needle or every third needle.

(11) The Stitch Dial is used to alter the size of stitches. The Stitch Dial can be adjusted by setting the dial number to the Stockinet position at the centre. The numbers on the dial are arranged so that the higher the number, the larger the stitch, and the lower the number the smaller the stitch.

Kind of Yarn	Recommended Stitch Dial No.
① Cotton Thread	2–3
② 2 ply wool	2–3
③ Summer Yarn (Synthetic) A	3–4
④ Summer Yarn (Synthetic) B	3–4
⑤ 3 ply wool	3–5
⑥ 4 ply wool (Medium)	4–6
⑦ Boucle	5–6
⑧ Thick wool	6–9
⑨ Mohair (use every other needle)	8–10
⑩ Very Thick Wool (use every other needle)	6–7
⑪ Super Heavy Wool (use every other needle)	8–10



(Actual Size)

4. HOW TO USE THE KNIT CONTOUR

The Knit Contour greatly assists you when you knit and makes knitting easier and more pleasant. For Model SK-324 the Knit Contour, Pattern Paper and Stitch Scales are optional extras.

*NAMES OF COMPONENT PARTS AND THEIR OPERATION *

Paper Holder:
Holds Pattern Paper against the roller while knitting with Pattern Paper.

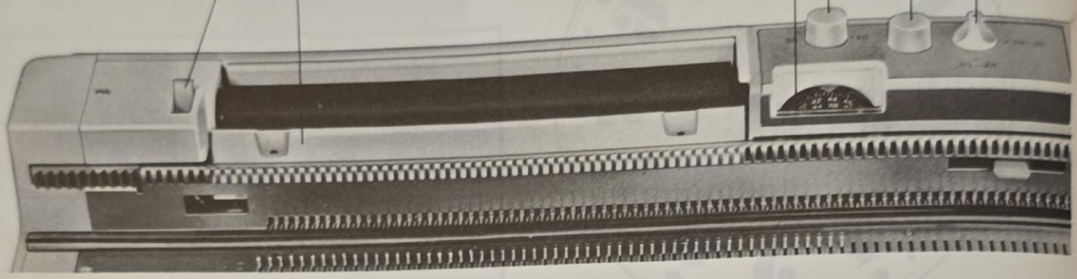
Paper Lever:
Used to set Pattern Paper in position.

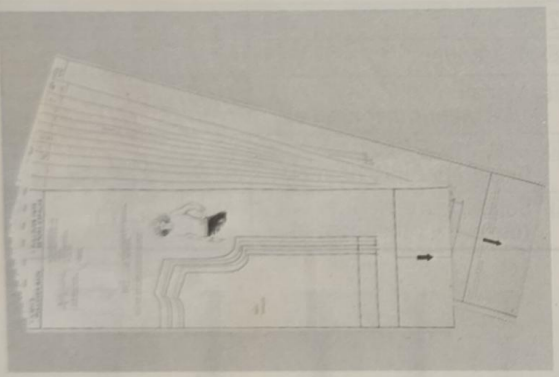
Change Dial:
Set this dial to 30–60 when you are going to knit at gauge rows below 60, and set at 60–120 when the gauge rows are above 60. Set this dial to ▲ mark to turn the Row Number Dial or to stop the feeding of the Pattern Paper.

Feeding Dial:
The position of Pattern Paper is adjusted by this dial.

Row Number Dial:
The number of rows are adjusted by this dial to the gauge rows counted on the swatch.

Row Number Window:
Indicates the gauge rows.



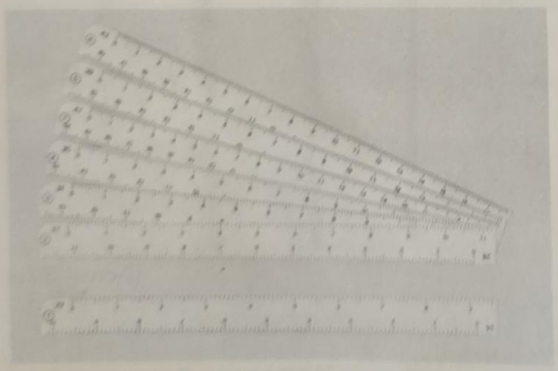


*Pattern Paper *

20 sheets of Pattern Paper representing 19 different patterns come with the knitting machine. Each pattern is drawn to ½ scale.

*GAUGE SCALE *

This is used to read number of rows on "R" side up and number of stitches on "S" side up.



*STITCH SCALE *

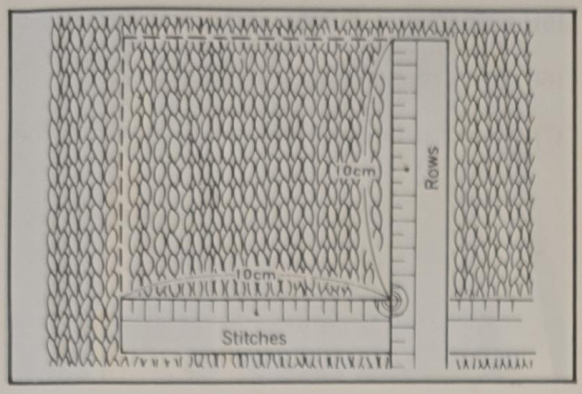
Scale No.	①	②	③	④	⑤	⑥	⑦
Range of Sts.	23～26	27～30	31～34	35～38	39～42	43～46	47～50

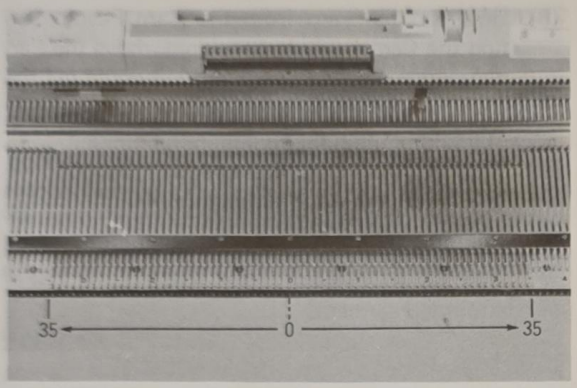
There are 7 Stitch Scales covering the gauge stitches ranging from 23 to 50 per 10cm.

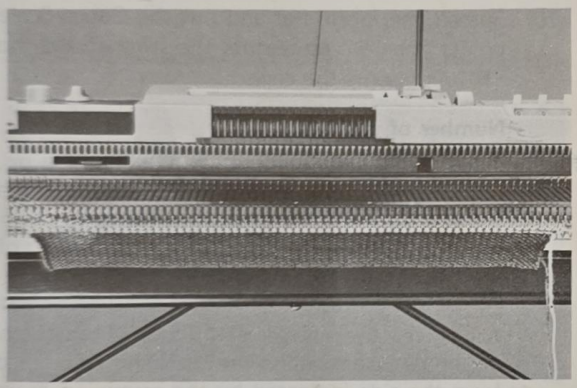
*CENTRE SCALE *

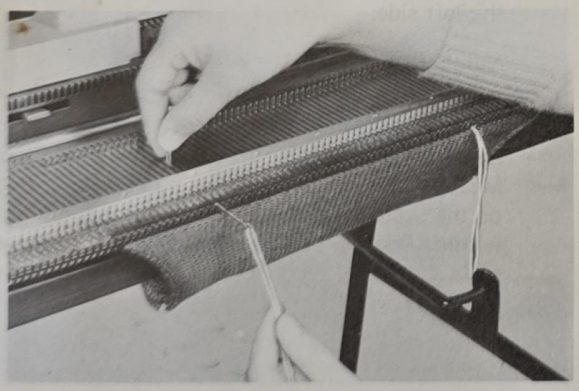
Scale No.	⓫	⓬	⓭	⓮	⓯	⓰
Range of Sts.	23～26	27～30	31～34	35～38	39～42	43～44

There are 6 Center Scales covering the gauge stitches ranging from 23 to 44 per 10cm. The Center Scales are used for working slacks etc.









Tension Swatch.

Knit a tension swatch to calculate the number of stitches and rows. For a swatch cast on 60 stitches and knit about 80 rows using the yarn and the kind of stitch pattern for the garment. Press it lightly with a steam iron to make the stitches the same as a finished garment. Spread it evenly and count the number of stitches and rows in 10cm (4") at the middle of the garment.

The gauge is the base of knitting. If the gauge is not correctly taken, you are not able to expect the finished garment in a correct size. Therefore, try to count the number of stitches and rows after the stitches are perfectly relaxed.

How to Measure a Swatch with a Gauge Scale.

(1) At the centre of the needle bed (0), bring out 35 needles on both left and right side. Cast on with the knitting yarn and knit 20 rows.

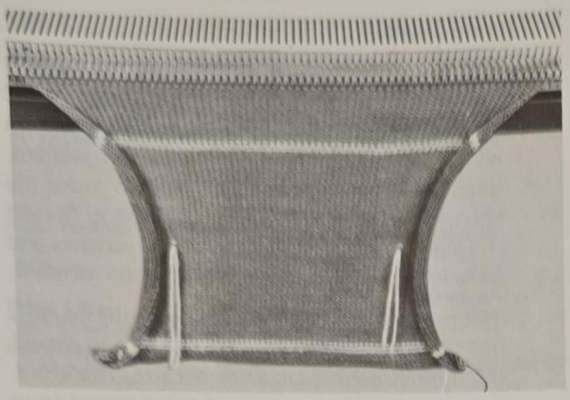
NOTE:

In case of knitting a garment in pattern stitch, knit a swatch in the following manner:—
5–6 rows in Stockinet knitting
20 rows in pattern knitting
2 rows in Stockinet knitting
30 rows in pattern knitting
Place yarn marks on the 21st needles
30 rows in pattern knitting
2 rows in Stockinet knitting
20 rows in pattern knitting
Remove fabric from the machine.

(2) Remove the yarn from the yarn feeder. Thread the different colour yarn into yarn feeder ① and knit 2 rows.

(3) Remove the yarn from the yarn feeder. Re-thread the knitting yarn into the yarn feeder and knit 30 rows.

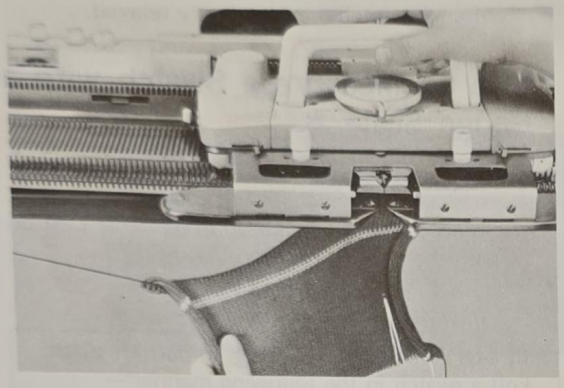
(4) Bring out the 21st. needle on both sides of 0 to D position by hand. Put the different colour yarn onto the hook of each needle and push the needles back to B position.



(5) Knit another 30 rows in the same manner.

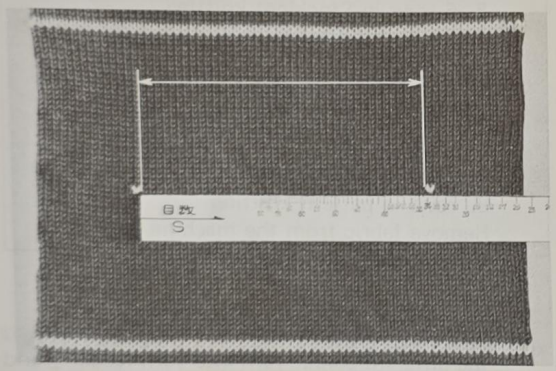
(6) Knit 2 rows with the distinguishable yarn.

(7) Unthread the yarn and knit 20 rows with knitting yarn.



(8) Unthread the yarn from the Yarn Feeder Setting the Cam Lever to Stockinet, move the Carriage once, and the garment will come off the needles.

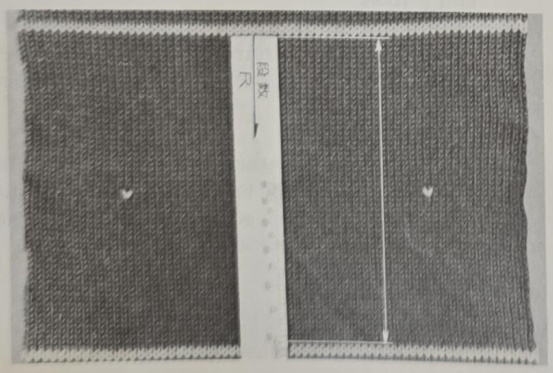
(9) The fabric is stretched in a horizontal direction. Stretch it slightly vertically so as the stitches may become flat. Allow the fabric to relax for several hours. As a final instruction press it lightly with a steam iron to make it like that of a finished garment.



(10) Spread the fabric flat and put the Gauge Scale on it. The "S" represents the stitches and the "R" represents the rows.

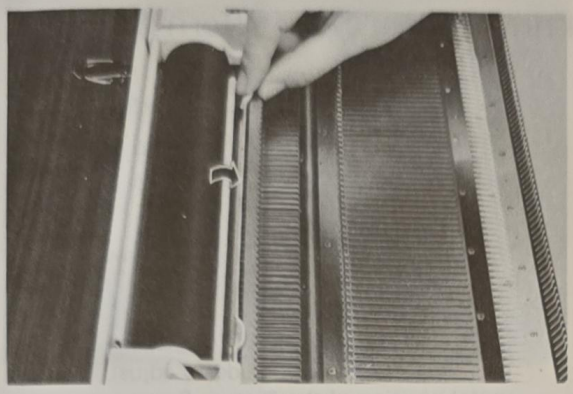
Number of stitches:

Place the Gauge Scale, with the "S" side up, onto the tension swatch so as the left end of the Scale is touching the outside of the stitch knitted in a contrast yarn. Measure to the point of the other contrast knitted stitch and the number which corresponds with this stitch, corresponds with the number of stitches within 10cm. on the tension swatch. The Scale should be read from the side indicated by the arrow, i.e. from the left side.



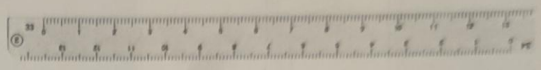
Number of rows:

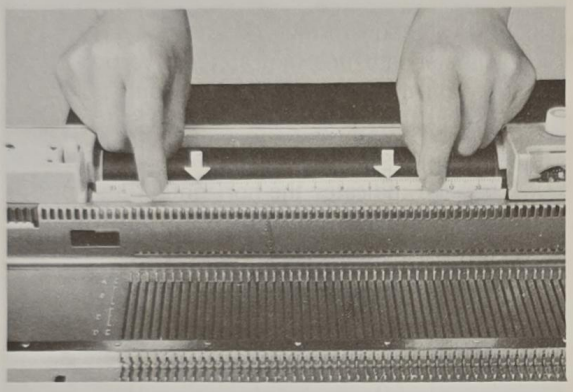
Place the Gauge Scale, with the "R" side up, on the tesnion swatch so as it covers the length in between the rows knitted in a contrast yarn. Measure this length and the number indicated on the Scale corresponds to the number of rows within 10cms. on the tension swatch. The gauge scale should by read from the side indicated by the arrow.



*How to set the Stitch Scale *

(1) Select the Stitch Scale with the number equal to that of the stitches counted on the swatch.

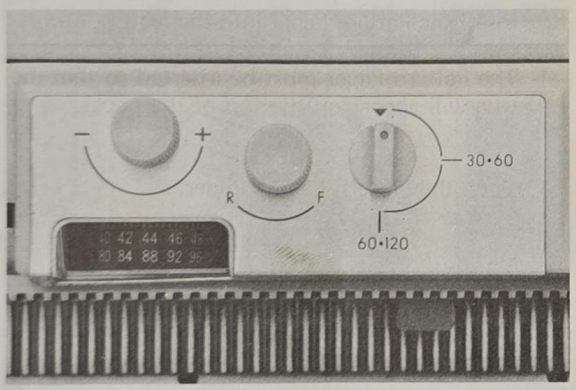




(2) On the Knit Contour, open the Paper Holder towards you.

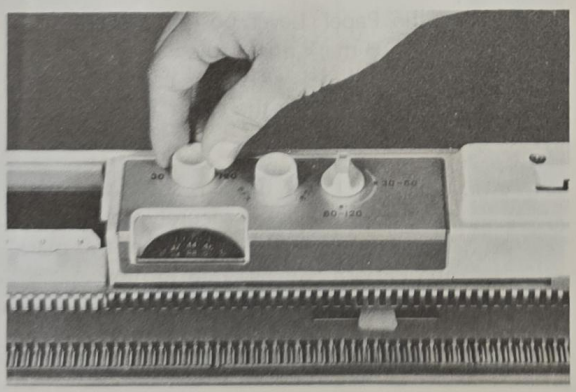
(3) Insert the selected Stitch Scale into the clips of the Paper Holder, so as the scale is facing you.

* Be sure to push the Stitch Scale down as far as it goes to prevent the scale from being crooked.

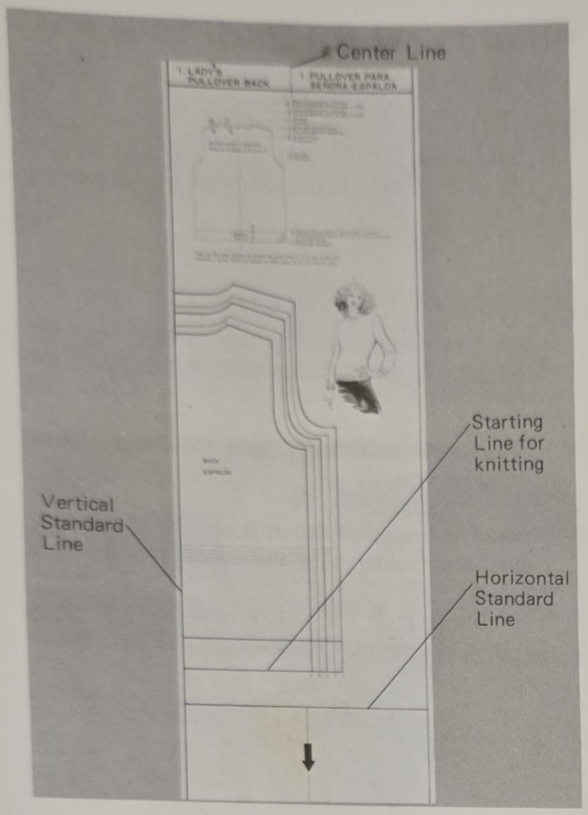


*How to Set the Row Number Dial *

(1) Adjust the Change Dial to the ▼ mark.



(2) Next adjust the number of gauge rows to the red arrowmark in the row number window, by turning the Row Number Dial. The row numbers are indicated in two sections. Be sure to read the row corresponding to the 30—60 or 60—120 depending on the row count on your swatch.

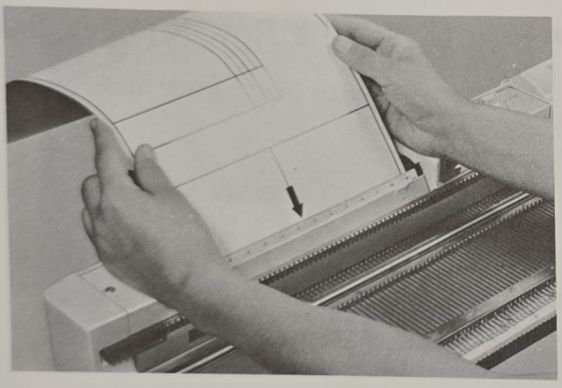


How to Set the Pattern Paper

(1) Prepare the Pattern Paper.
Pick up one of the patterns you desire to knit.

* The pattern is reduced to 1/2 size. Each pattern has 2–5 sizes which are classified A,B,C,D and E.
* The following standard lines are drawn on the Pattern Paper.

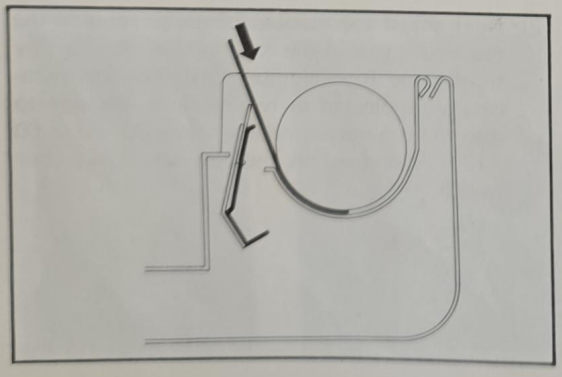
1. Centre Line.
This line is used as a guide to adjust the horizontal position of the Pattern Paper.
2. Vertical Standard Line.
This standard line indicates the vertical directions on the pattern. This line should be adjusted so as it meets with the 0 on the Stitch Scale.
3. Horizontal Standard Line.
This line indicates the horizontal directions of the pattern and should be always parallel to the Stitch Scale.
4. Starting Line for Knitting.
Knitting is begun from this line.



(2) Insert the Pattern Paper into the Knit Contour.

* The Pattern Paper must be inserted so that the title will appear on the top of the paper.

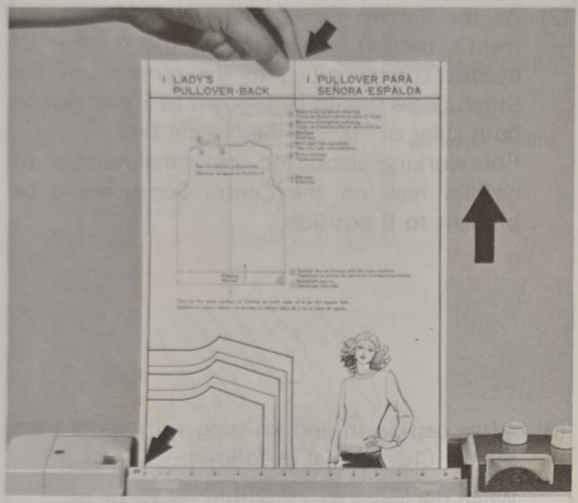
1. Open the Pattern Paper Holder.



2. Change the Paper Lever position from the ▼ mark to the ● mark. Insert the Pattern Paper as illustrated until it is perfectly caught beneath the roller. Then place the Paper Lever back to the ▼ mark.

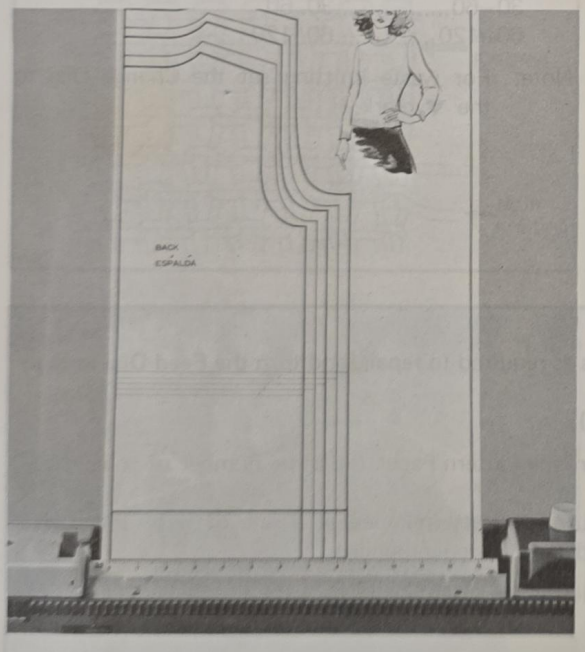
▼.....When the Paper Lever is set at this mark, the Pattern Paper is securely held.
●.....When the Paper Lever is set at this mark, the Pattern Paper is free to move.

(3) Feed the Pattern Paper by turning the Feeding Dial until the bottom end of the Pattern Paper comes out from the back.

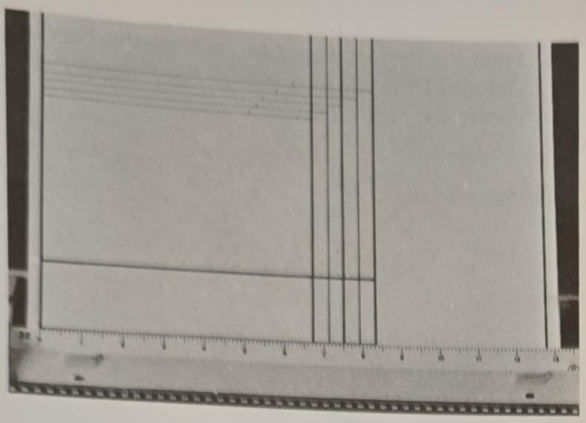


(4) Place the Paper Lever to the ● mark. By taking both ends of the Pattern Paper together, adjust the Centre Line position so as it corresponds on both ends of the Pattern Paper, hence making a straight line. Whilst pulling up the Pattern Paper, adjust the Vertical Standard Line so as it meets with the 0 on the Stitch Scale.
Afterwards, set the Paper Lever to the ▼ mark and push the Paper Holder back, so as it secures the paper into position.

* If there is a difference as, for example, half a stitch, it can be adjusted by sliding the Stitch Scale to either the right or left side.

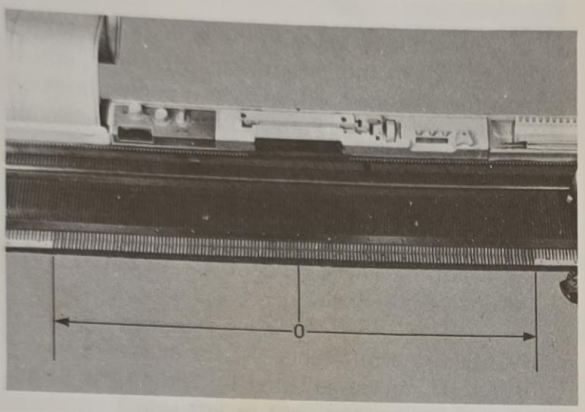


(5) Return the Pattern Paper by turning the Feeding Dial until the Starting Line, for knitting, appears on the upper edge of the Stitch Scale. Now the Knit Contour is ready for knitting to begin.

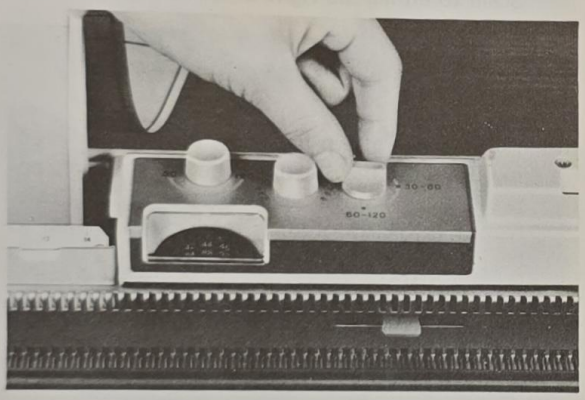


Preparatory Steps for Knitting

(1) To determine the number of stitches to be cast-on for your garment. You must read the number, on the Stitch Scale, at its crossing point with the contour on the Pattern Paper.



(2) As the Pattern Paper has only ½ of the garment's pattern drawn on it, the number of needles corresponding to the number on the Stitch Scale should be brought to B position on both sides of "0" on the Needle Bed.
For working slacks, etc. only the number of needles read on the Centre Scale should be brought to B position.



(3) After casting-on and knitting with waste yarn, set the Change Dial as follows:—

When the gauge row is within the range of:
30—60.....30. 60
60—120.....60. 120

Note: For waste knitting set the Change Dial to the ▼ mark.

If you have knitted incorrectly, unravel as many rows as required to repair, and turn the Feed Dial in the R marked direction in the method given below:—
(One clicking sound of the Feed Dial equals one row.)

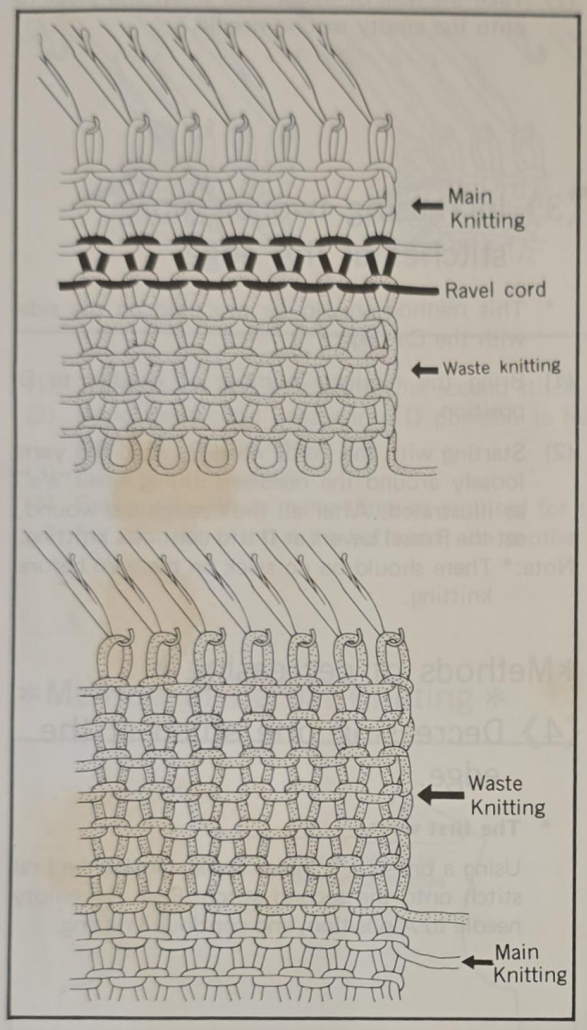
(1) When the Change Dial is set at 30—60, return the Pattern Paper the same number of rows that have been unravelled.

(2) When the Change Dial is set at 60—120, return the Pattern Paper at a rate of ½ of the rows unravelled. (The rows to be unravelled should be an even number.)

If the Carriage is operated on one particular side (either right or left) of the needle bed, The Row Counter or the Knit Contour will malfunction.

5. BASIC TECHNIQUES OF KNITTING

The knitted pieces are shaped by increasing, decreasing, or partial knitting as they are being knitted. For completion of a knitted garment, many special techniques are used. The following is a brief explanation of the aspects absolutely necessary for the purpose:

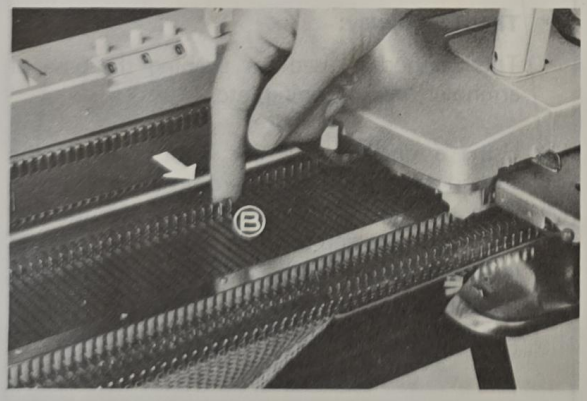


《1》 Waste Knitting

It is advisable to knit approximately 8 to 10 rows of odd waste yarn as the first row is always loose and easily damaged. Knit one row with Ravel Cord only before beginning main yarn for garment. This will enable you to knit ribbing after the bodice is completed by picking up stitches of main yarn inter-looped with the Ravel Cord or make a finished hem at the beginning of a garment.

The waste yarn is easily removed, by pulling the Ravel Cord, from the garment. It is also convenient to remove the work from the machine by knitting 8—10 rows of waste knitting.

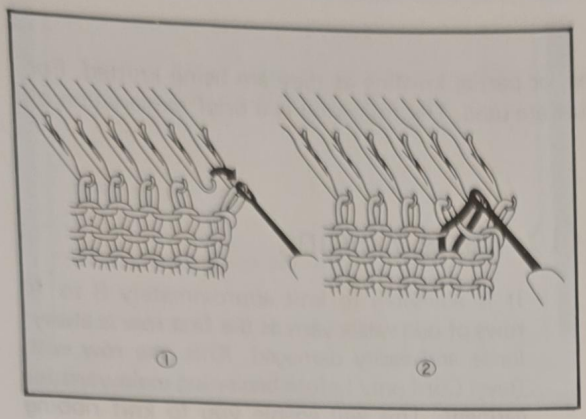
Methods of Increasing



《2》 Increasing one stitch at the edge.

* **The first way:**

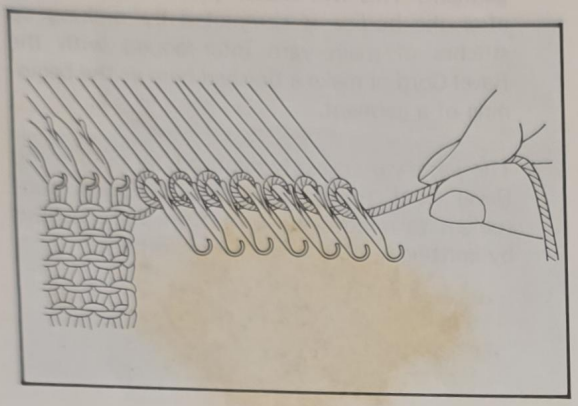
Bring one empty needle to B position on the side with the Carriage and continue knitting.



* **The second way:**

(1) Using a one-eye Transfer Tool, transfer the edge stitch onto the hook of the next vacant needle leaving the second needle vacant.

(2) Take the heel of the second stitch and place it onto the empty second needle.



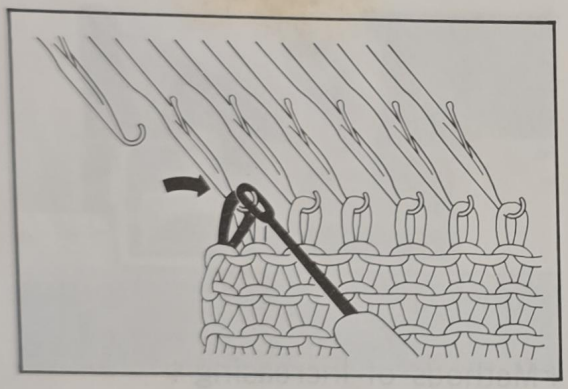
《3》 Increasing two or more stitches at the edge.

* This method should be practised on the side with the Carriage.

(1) Bring the required number of needles to D position.

(2) Starting with the inside needles, wrap the yarn loosely around the needles forming small "e's" as illustrated. After all the needles are wound, set the Russel Levers at **II** and continue knitting.

Note: * There should be no slack on the yarn before knitting.

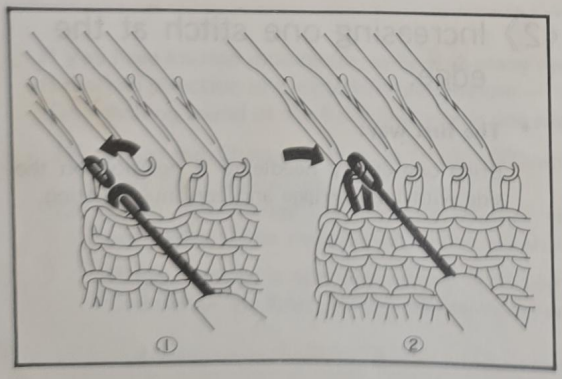


＊Methods of decreasing＊

《4》 Decreasing one stitch at the edge.

* **The first way:**

Using a one-eye Transfer Tool, transfer the first stitch onto the second stitch. Push the empty needle to A position, and continue knitting.



* **The second way:**

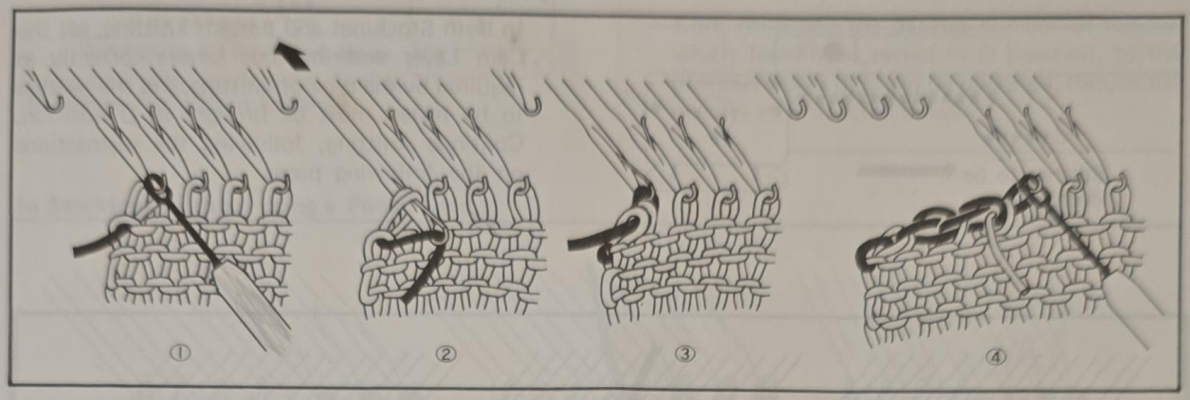
This method is used for shaping the base of armholes, neck opening, etc.

(1) Using a one-eye Transfer Tool, transfer the second stitch from the edge onto the first stitch.

(2) With the same Transfer Tool, transfer the two stitches on the end to fill in the empty needle. Push the empty needle to A position and continue knitting.

《5》 Decreasing two or more stitches at the edge.

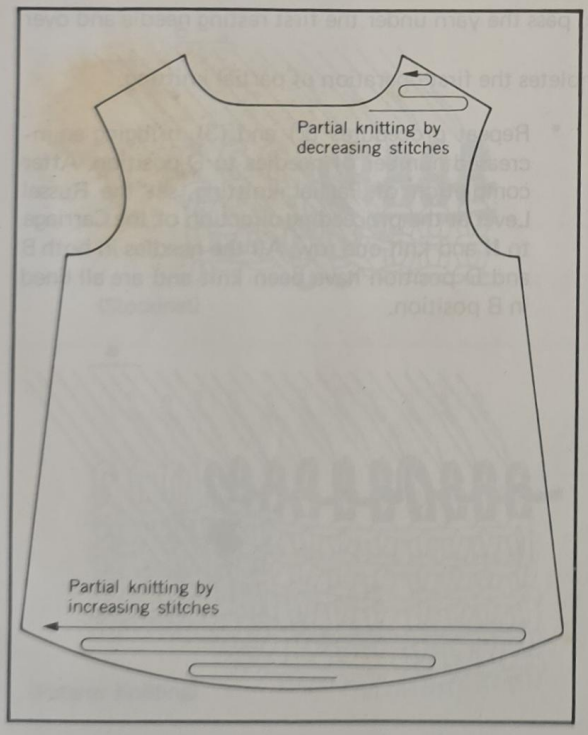
This method is used for shaping the base of armholes, neck opening, etc.



(1) Transfer the first stitch onto the second stitch.
(2) Bring the second needle into D position to have the double stitch behind the latch, and lay the yarn inside the needle hook.
(3) Push back the needle.
(4) Repeat (1)—(3) as many times as required for the stitches to be decreased.

* For the side without the yarn end, use another yarn to do the above procedure.

＊Method of Partial Knitting＊



* Partial knitting is often used to shape a gentle slope such as shoulder slopes, darts, curve of lower edges, etc.

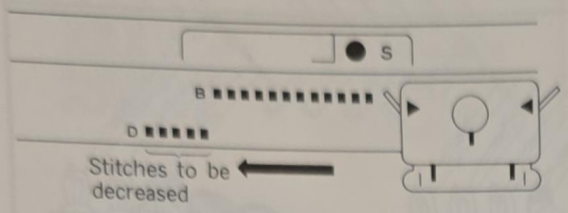
* When partial knitting, set both Russel Levers to the **I** position.
With the Russel Levers at **II** position, the needles resting in D position will be knit.

* With Slip stitch, Fair Isle (knit-in), or Weaving patterns, one edge needle is brought to D position. But, when partial knitting, bring the needle to C position. The needle placed in D position is not knitted.

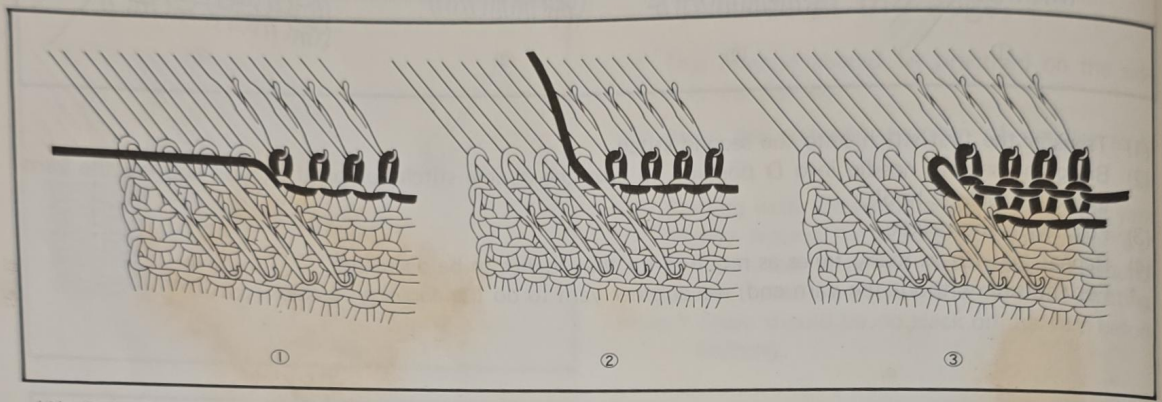
* The Cam Lever and both Side Levers should be set correctly, as required by the type of knitting.

* In knitting Punch Lace, bring one end needle opposite the needles in D position (resting) to D position before operating the Carriage from right to left. When operating the Carriage from left to right, bring the needle to C position.

《6》 Partial knitting by decreasing stitches.



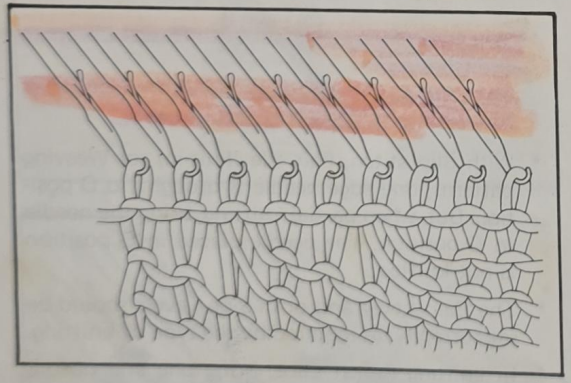
In both Stockinet and pattern knitting, set the Cam Lever and the Side Levers correctly as required by the type of knitting, and the needles to be rested must be brought to D position. Continue knitting, following the instructions on the following pages.



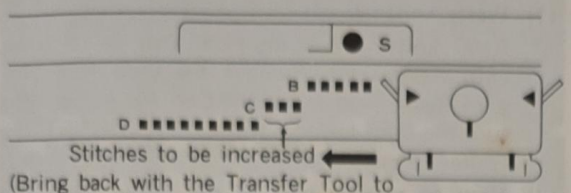
(1) Bring the required number of needles on the opposite side of the Carriage which are to be decreased to D position, and knit one row. (The needles in B position knits the yarn. The needles in D position remain inactive and the yarn passes over them.)

(2) To prevent a hole from being formed in the fabric, pass the yarn under the first resting needle and over the other needles.

(3) Knit one row by moving the Carriage back. This completes the first operation of partial knitting.



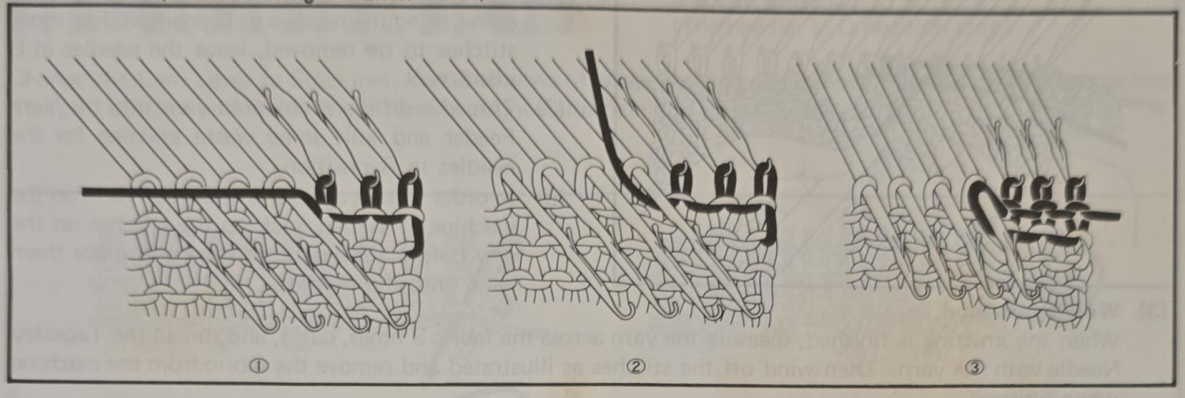
* Repeat procedures (2) and (3), bringing an increased number of needles to D position. After completion of Partial knitting, set the Russel Lever at the proceeding direction of the Carriage to **II** and knit one row. All the needles in both B and D position have been knit and are all lined in B position.



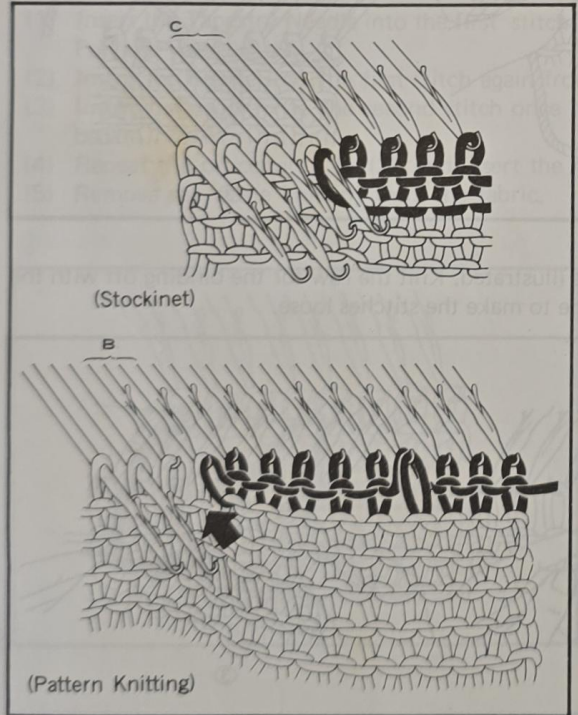
《7》 Partial knitting by increasing stitches.

Knit, returning the desired number of needles which have been rested in D position, to the position where they can be operated. Return the needles as instructed below.

In Stockinet (without using a Punch Card.)



(1) Leaving the first set of needles to be increased in B position on the Carriage side, bring the other needles to D position. Knit one row.
(2) To prevent a hole from being formed in the fabric, pass the yarn under the first resting needle and over the other needles.
(3) Knit one row by moving the Carriage back. This completes the first operation of partial knitting.



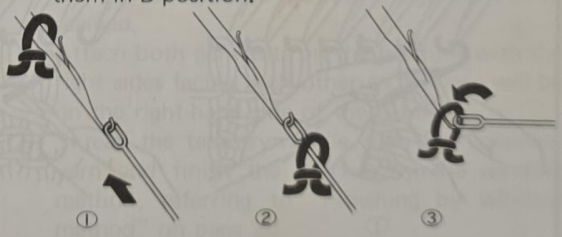
In Stockinet.

Push the desired number of needles which have been resting in D position, back to C position and knit the third row.

* When the needles are pushed back to C position, be sure they are correctly positioned within the range marked by the sign]).

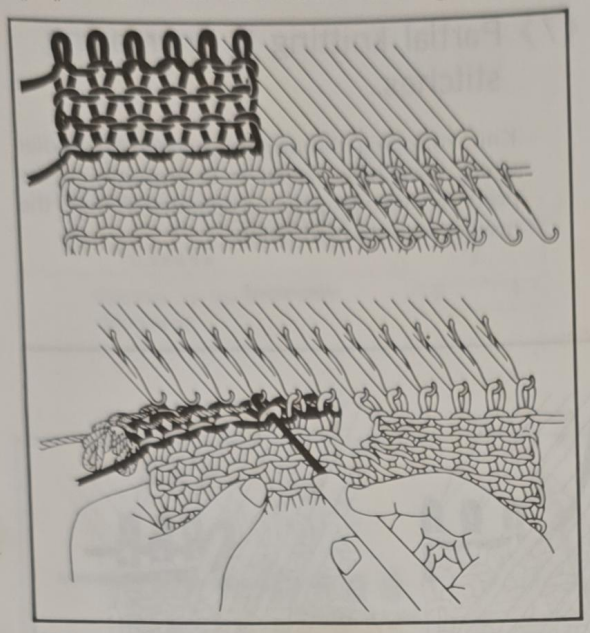
In pattern knitting Tuck Stitch Patterns, Slip Stitch Patterns, Fair Isle, Weaving, Punch Lace and Lace Knitting.

Although the number of needles rested in D position are to be gradually increased as in Stockinet, the loops of the needles to be increased must be placed in the hook of the needle using a transfer tool as illustrated. Then line them in B position.



Finishing

《8》 How to remove the garment from machine.



(1) Waste knitting.

* After knitting is completed, knit 8–10 rows with waste yarn. Remove the yarn from the yarn feeder and move the Carriage across. (Be sure the Cam Lever is set at "STOCKINET".) (Refer to page 19.)

(2) How to remove part of the fabric from the machine.

Set the Cam Lever at Stockinet and the Russel Levers at **I**.

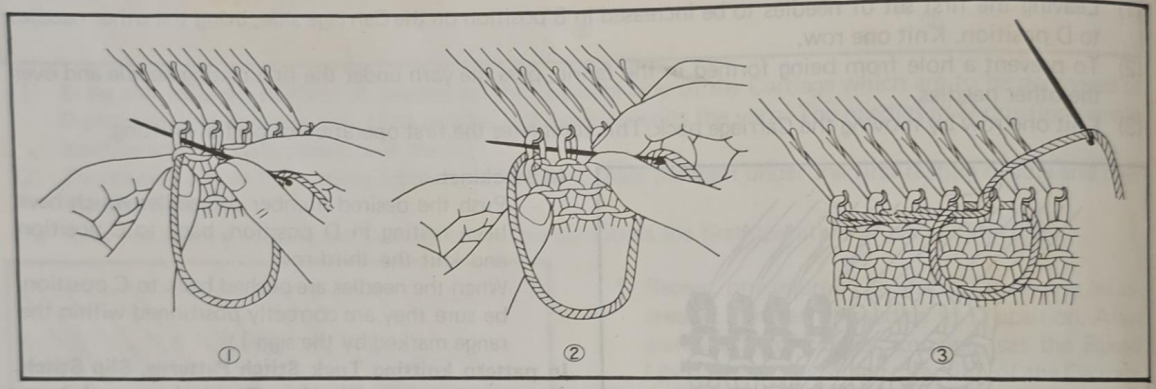
(1) For the stitches that are to remain on the machine, bring the needles to D position. For those stitches to be removed, leave the needles in B position.

(2) Thread a different coloured yarn into the Yarn Feeder and knit some waste knitting for the needles in B position.

(3) In order to knit again the removed fabric on the machine if needed, pick up the stitches on the row before the waste knitting and place them back onto the needles.

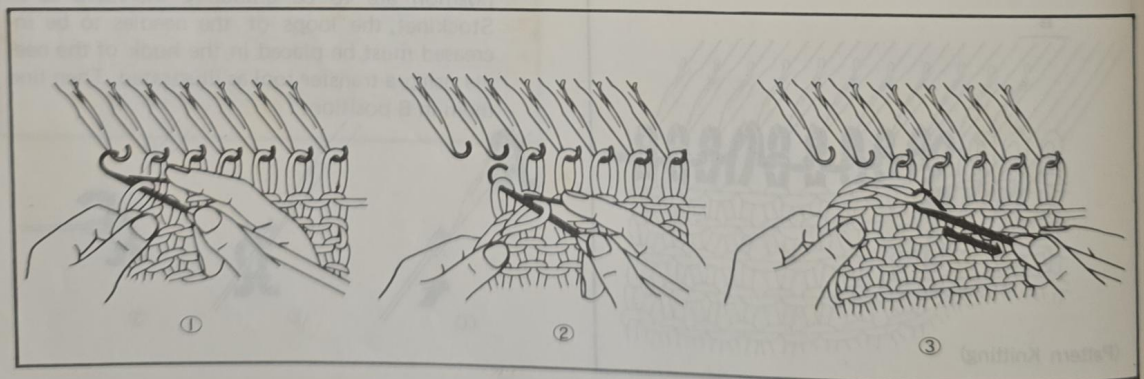
(3) Winding method.

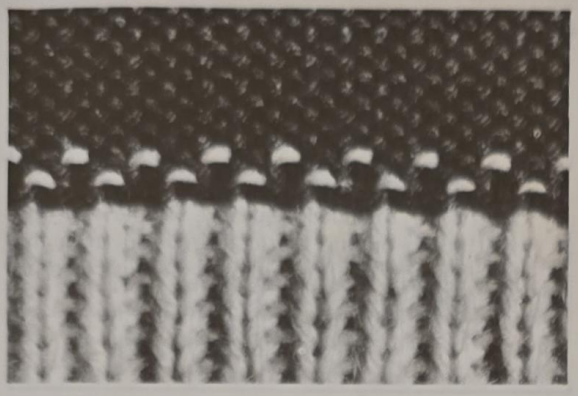
When the knitting is finished, measure the yarn across the fabric 3 times, cut it, and thread the Tapestry Needle with the yarn. Then wind off the stitches as illustrated and remove the fabric from the machine when finished.



(4) Binding off.

With the aid of the Tappet, bind off the stitches as illustrated. Knit the row for the binding off with the Stitch Dial 2–3 numbers higher than the original one to make the stitches loose.



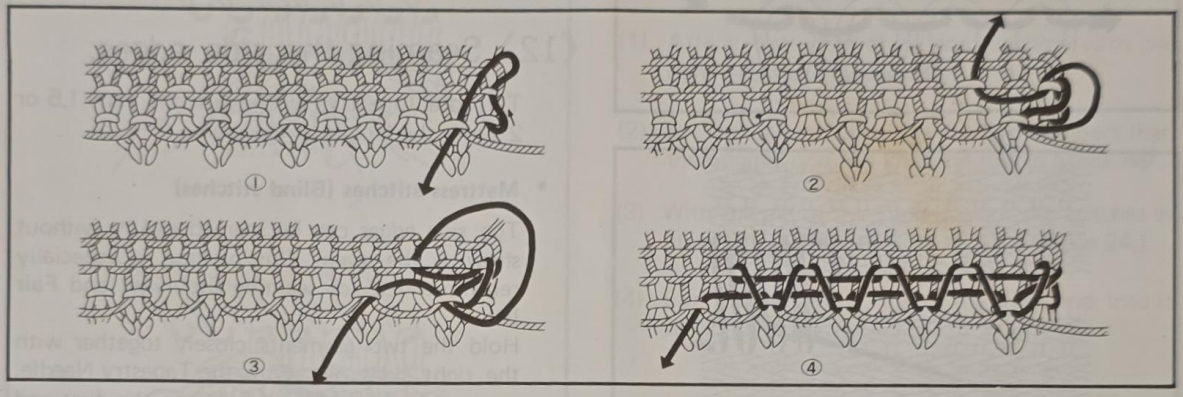


《9》 Binding off K1 P1 Ribbing

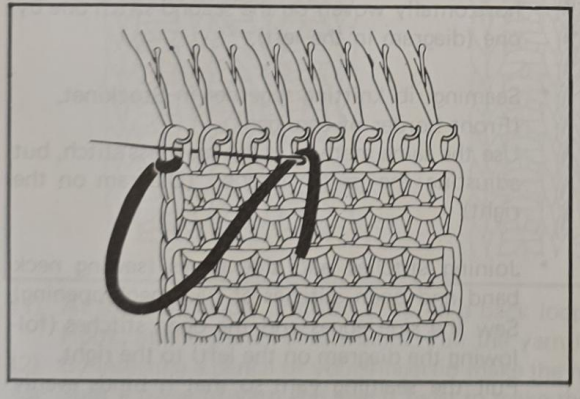
After the K1, P1 Ribbing is finished, knit waste knitting as follows:—

(1) Measure the yarn across the fabric 3 times and cut it. With aid of the 1 x 1 Needle Pusher, push the needle, with the purl stitches, into D position. Thread the waste yarn into the Yarn feeder and set the Carriage as follows:—
Russel Levers.....II
Cam Lever.....SLIP
Side Lever .....● (both)
and knit one row.
(The needles in D position knit.)

Change the Cam Lever to Stockinet, knit 7—8 rows of waste knitting and remove the fabric from the machine. The purl stitches and the knit stitches are aligned alternately as shown in the picture.



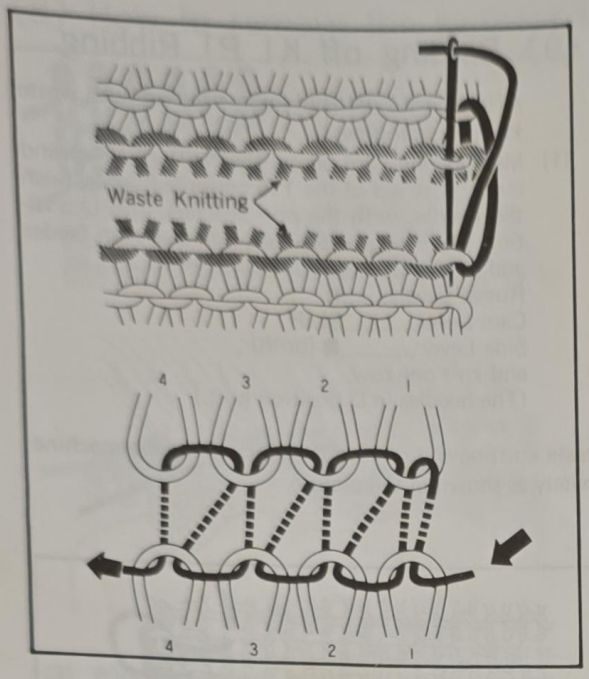
(1) Insert the Tapestry Needle into the first stitch from the front and into the second stitch from the back. Pull the yarn lightly.
(2) Insert the needle into the first stitch again from the back and into the third stitch from the front.
(3) Insert the needle into the second stitch once more from the front and into the fourth stitch from the back.
(4) Repeat the procedure (2)—(3), and insert the needle into the last stitch twice.
(5) Remove the waste knitting from the fabric.



《10》 Seaming on machine or Binding off *

The seam made on the machine needles are smooth and have adequate elasticity. They are widely used for seaming shoulders, dolman sleeves, etc. At the end of either garment leave the yarn 3 times the width of the garment to be seamed.

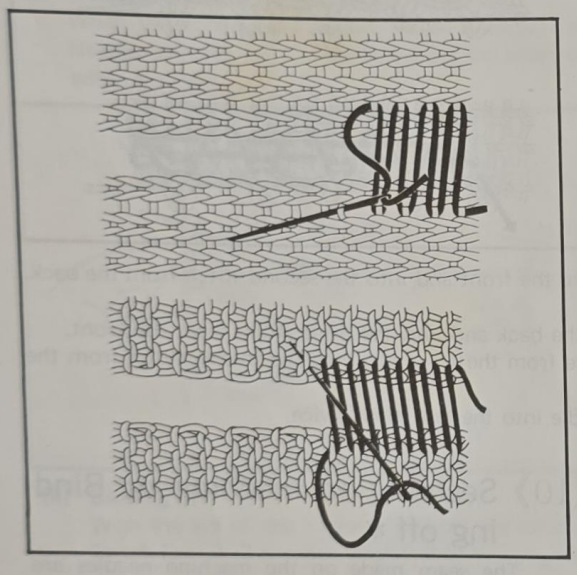
(1) Attach both garments on the machine with the right sides facing each other so the yarn will be on the right-hand side of the garments.
(2) Thread the tapestry needle with the remaining yarn and finish the stitches by the winding method, referring to "Finishing by winding method" on page 24.

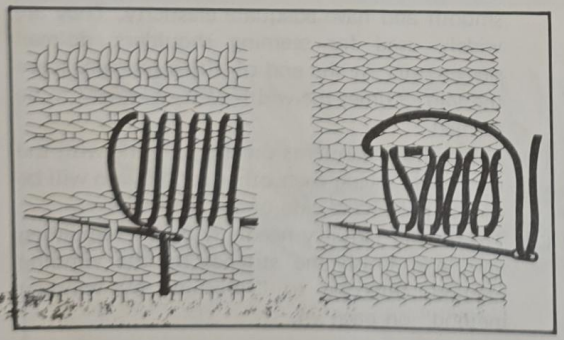


《11》 Kitchener stitch or weaving

Remove both fabrics from the machine after knitting 8–10 rows of waste knitting. Hold the two fabrics in your left hand with the right sides facing each other.

Insert the threaded Tapestry Needle into the first stitch on the fabric facing you from the outside, and continue joining as illustrated on the right.





《12》 Seaming the side edges.

Thread a Tapestry Needle with the yarn 1.5 or 2 times the length of the seam.

* **Mattress stitches (Blind stitches)**

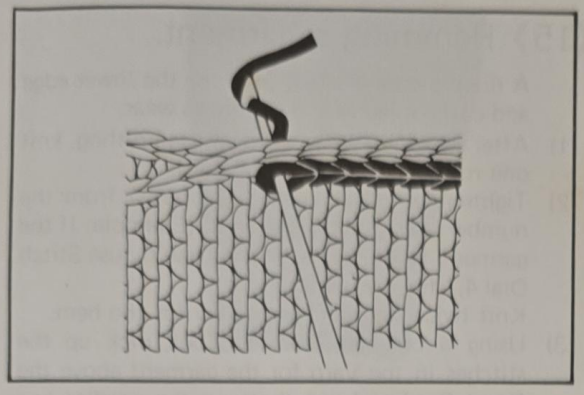
The side edges can be seamed neatly without showing the seam. This method is especially recommended for seaming Stockinet and Fair Isle.
Hold the two garments closely together with the right sides out. With the Tapestry Needle, scoop the yarn crossing between the first and the second stitches alternately from each garment one by one.

* When the wrong side of the knitting is used, join the pieces by picking up the edge stitches one by one at the wrong side as illustrated.

* Binding off K1, P1 Ribbing scoop the yarn horizontally woven on the second stitch one by one (diagram in the left).

* Seaming rib knitting together in Stockinet.
(Front border of cardigan)
Use the same method as the mattress stitch, but adjusting the gauge number. (Diagram on the right)

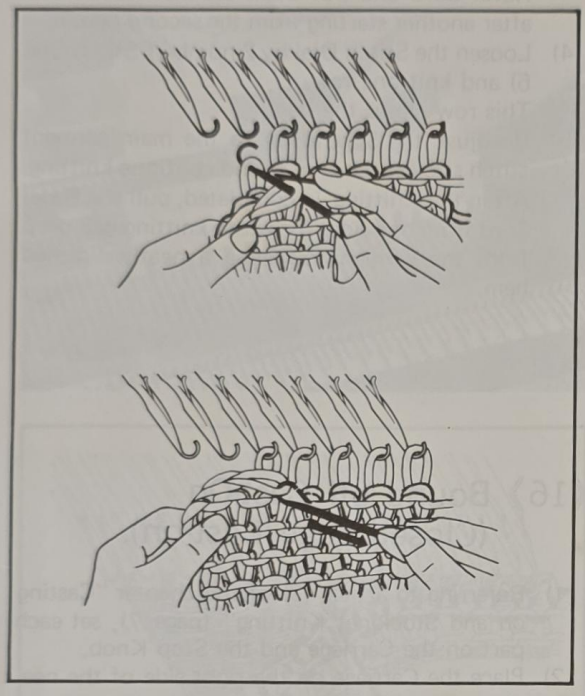
* Joining stitches and side edges (sewing neck band and open stitches of back neck opening).
Sew the side edges and the open stitches (following the diagram on the left) to the right.
Pull the seaming yarn so that it binds evenly but not too tightly.



《13》 Slip stitches

*** (to attach sleeve).**

(1) Put the two pieces with the right sides in and work slip stitches along the edge using a Crochet Hook.



*** Slip stitches on the machine.**

This method is used for joining the side edges of two pieces of fabric.

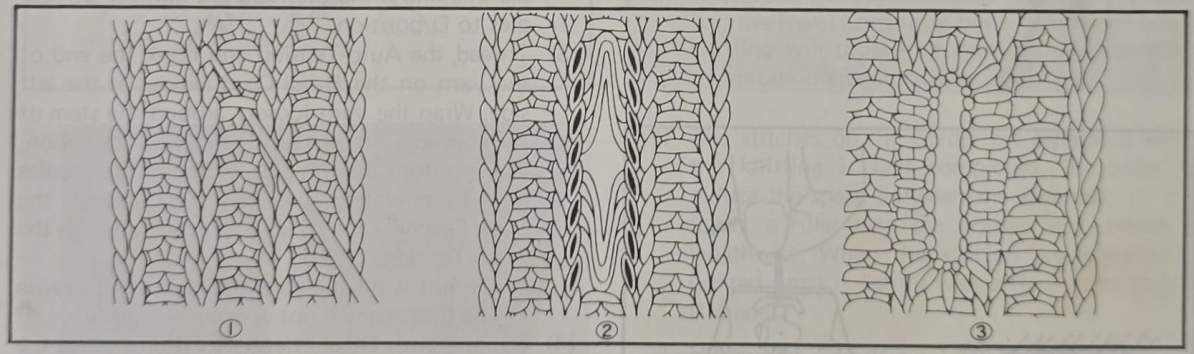
(1) Attach both fabrics on the machine with the right sides facing each other.

(2) Set the Stitch Dial higher by two numbers than the original one and knit one row in Stockinet.

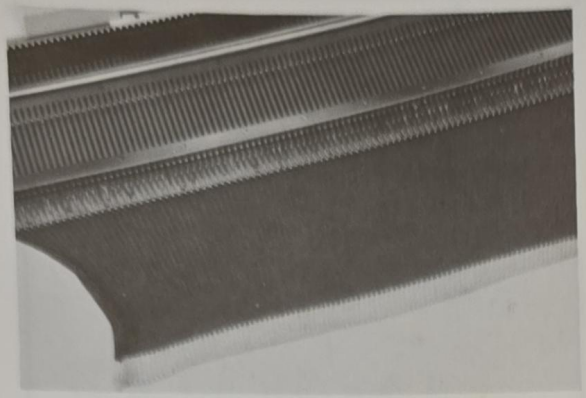
(3) With the aid of the Tappet work slip stitches as illustrated. (Refer to Binding off on Page 24.)

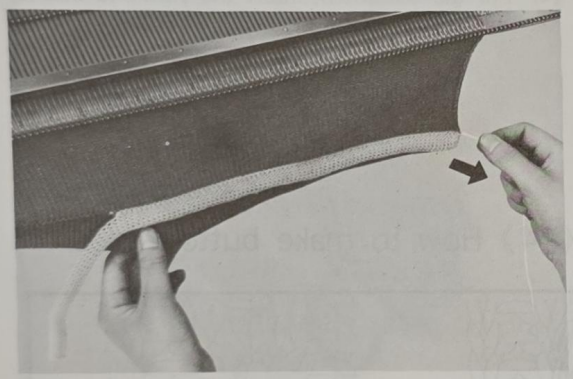
(4) For the last stitch, insert the yarn end into it and hold it tightly.

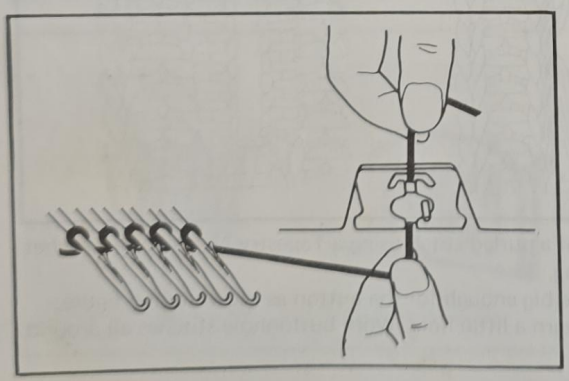
《14》 How to make buttonholes.



(1) At the buttonhole position, pick up a back loop of a purled stitch using a Tapestry Needle or a Crochet Hook, at the center of the band. Pull the yarn long.
(2) By inserting a pencil or your fingertip make the hole big enough for the button as shown in the figure.
(3) Split a piece of yarn and give it twist to make the yarn a little finer. Work buttonhole stitches all around with the yarn to finish.







《15》 Hemming a garment.

A double hem is often used for the lower edge and cuffs of ladies and children's wear.

(1) After knitting 8—10 rows of waste knitting, knit one row with a nylon ravel cord.

(2) Tighten the Stitch Dial 2/3 (2 points) from the number used for the garment. (Example: If the garment is knitted at Stitch Dial 5, use Stitch Dial 4.1 for the hem).
Knit twice the number needed for the hem.

(3) Using a one-eye Transfer Tool, pick up the stitches in the yarn for the garment above the Ravel Cord and put them on the needles one after another starting from the second needle.

(4) Loosen the Stitch Dial by 2 numbers Stitch Dial 6) and knit one row.
This row closes the hem.

(5) Readjust the Stitch Dial to the main garment stitch size (Stitch Dial 5) and continue knitting. After the knitting is completed, pull the Ravel Cord from one side. The waste knitting will drop from the garment revealing a neatly finished hem.

《16》 Bound off Cast-On (Closed edge Cast-on).

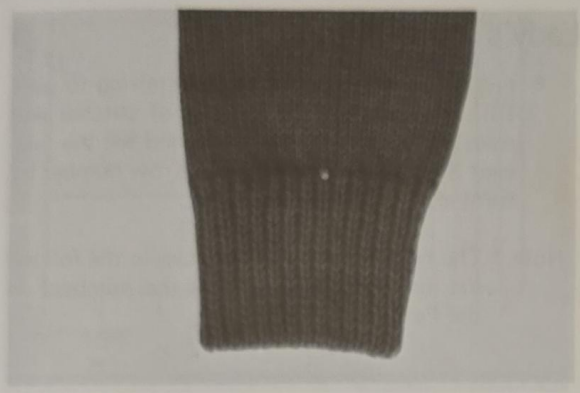
(1) Referring to article (3) of the chapter "Casting on and Stockinet Knitting" (page 7), set each part on the Carriage and the Stop Knob.

(2) Place the Carriage on the right side of the needle bed and bring the required number of needles to D position.

(3) Thread the Auto-Tension and hook the end of the yarn on the Ravel Cord Holder at the left side. Wrap the yarn loosely around the stem of each needle in the anti-clockwise direction, starting from the left side. After all the needles have been wound, pass the yarn through the Yarn Feeder. Take up slack on yarn through the Auto-Tension.

Note:* Do not wind the yarn too tightly, otherwise the Carriage will not operate smoothly.

(4) Set the both Russel Levers to **II** and move the Carriage across the needles to the left. Then push up those working needles to D position again and knit. Repeat this procedure 2 times more. This way knitting can begin with a finished edge.



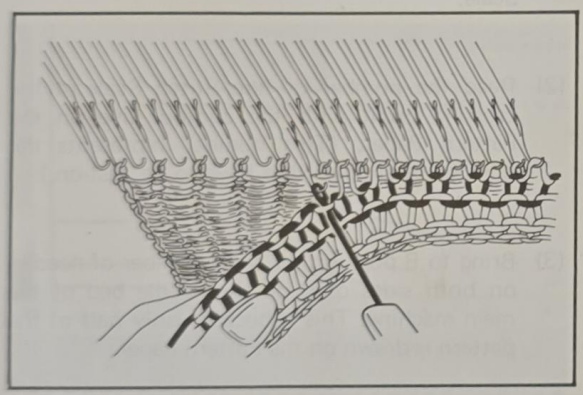
《17》 Mock Ribbing.

Mock ribbing is very easy to knit and makes a nice hem. It is especially recommended for hemming the cuffs on a sweater, as well as for the waist bands for child and sports wear.

(1) Bring the required number of needles to B position, using a 1 x 1 Needle Pusher, push every other needle back to A position.

(2) Knit 8—10 rows of waste knitting. Then, knit one row with a Ravel Cord.

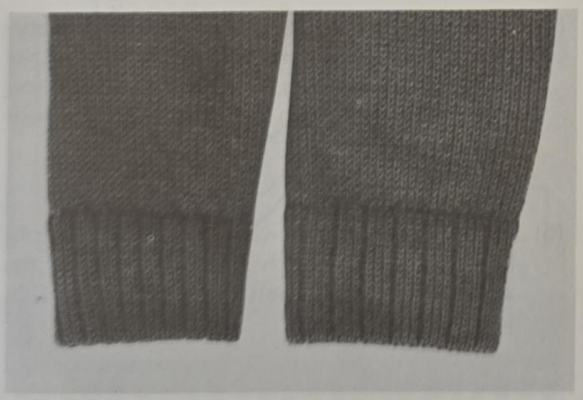
(3) The Stitch Dial for mock ribbing is usually set 3—4 numbers lower than the tension for the garment. Stitch Dial 1 is used in this case.



(4) Knit double the number of rows for the length of ribbing.

(5) Bring the needles which have been resting in A position to B position.
Using a one-eye Transfer Tool, pick up the loop above the Ravel Cord and place it onto the first empty needle one by one. Continue picking up each loop and placing it onto the empty needles until the complete hem has been picked up.

(6) Adjust the Stitch Dial to the garment and knit one row. Continue knitting required number of rows until the garment is completed.
Pull the Ravel Cord from one side and the waste knitting will drop from the garment revealing an imitation ribbed border.



(7) The stitches on the border are separated when the knitting is first completed. (In order to reduce the space between the stitches).
Insert a ruler into the border and stretch it lengthwise. When the stitches are adjusted as desired press it lightly with a steam iron to give it shape.

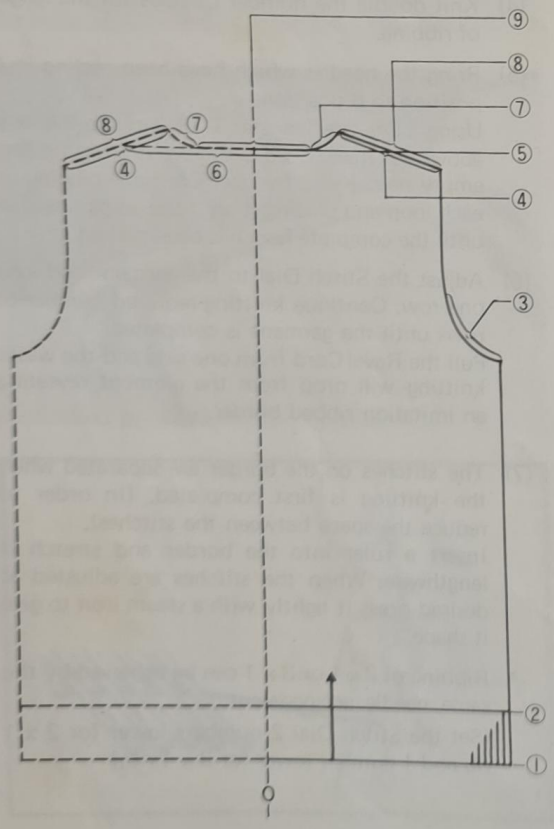
* Ribbing of 2 x 1 or 3 x 1 can be achieved by the same needle arrangement.
(Set the Stitch Dial 2 numbers lower for 2 x 1 rib and 1 number lower for 3 x 1 rib.)

6. LET'S KNIT

Lady's pullover:

* Prior to knitting, take gauge (referring to page 13), to determine the number of stitches and rows per 10 cms. Then, select and set the relevant Stitch Scale and adjust the row number by turning the Row Number Dial.

Note: * The numbers inside the circles in the following instructions, represent the numbers on the Patterns Papers.



How to Knit

BACK:

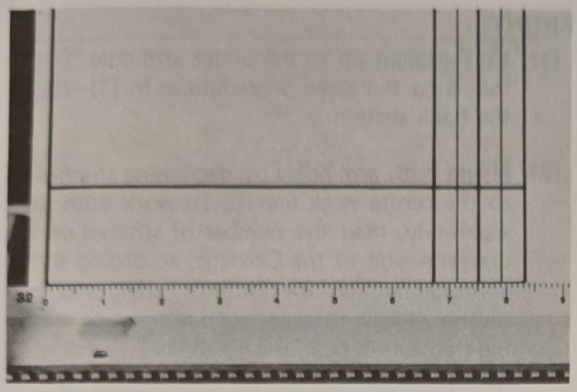
(1) Set the Pattern Paper adjusting the Starting Line ① for knitting to the top of the Stitch Scale.

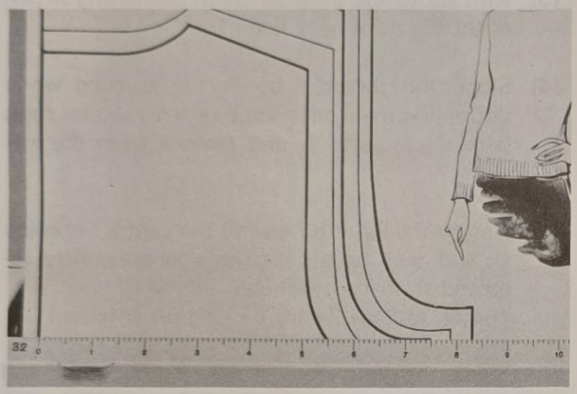
(2) Read the number on the Stitch Scale at the crossing point with the contour line on the Pattern Paper. (This number represents the number of stitches that have to be cast-on.)

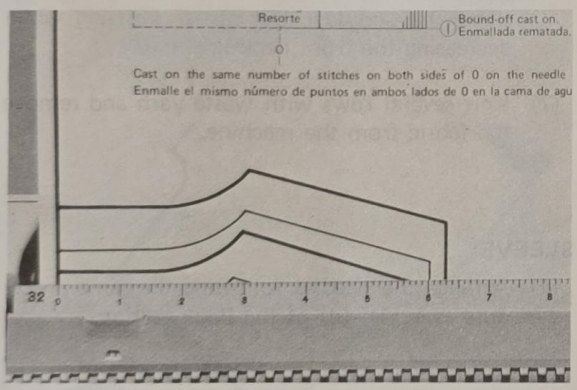
(3) Bring to B position the same number of needles on both sides of 0 on the needle bed of the main machine. This is because only half of the pattern is drawn on the Pattern Paper.

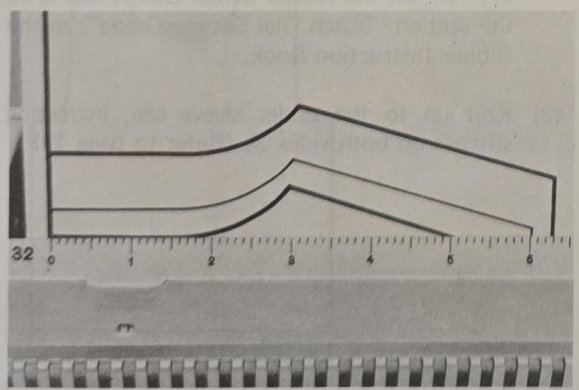
(4) Using the 1 x 1 Needle Pusher, push back every-other needle to A position. Bring every-other needle on the Ribbing Attachment to B position straggering them with the needles on the main machine.

(5) Cast-on and knit the waist band in 1K.1P. rib. Set the Ribber Stitch Dial, referring to the section "Stitch Dial Setting Guide", in the Ribber Instruction Book.






Resorte
Bound-off cast on.
Enmallada rematada.
Cast on the same number of stitches on both sides of 0 on the needle
Enmalle el mismo número de puntos en ambos lados de 0 en la cama de agu



(6) Knit straight up to the under armhole.

(7) For the arm-hole shaping ③, stitches must be decreased equally on both sides of the fabric following the contour line on the Pattern Paper. (Refer to Page 21 for decreasing more than two stitches and Page 20 for decreasing one stitch.)

(8) Slope the shoulder in Partial knitting (refer to page 21). Bring the required number of needles on the opposite side of the Carriage to D position, and knit one row ④. (Set both Russel Levers to I.)

(9) From the neck opening ⑤ you must work each side separately. According to the contour line on the Pattern Paper bring the needles on the opposite side of the Carriage to D position. These needles will be rested ⑥.

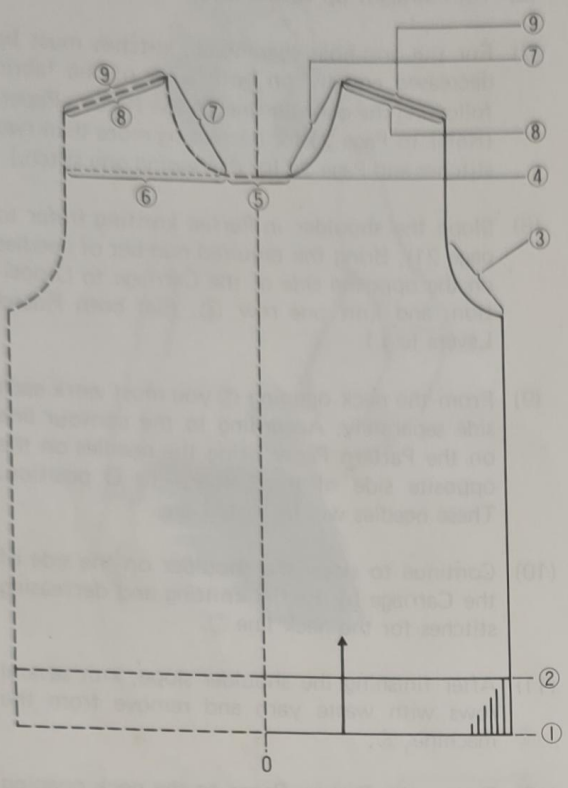
(10) Continue to slope the shoulder on the side of the Carriage by Partial knitting and decreasing stitches for the neck line ⑦.

(11) After finishing the shoulder slope, knit several rows with waste yarn and remove from the machine ⑧.

(12) Return the Pattern Paper to the neck opening ⑤ and read the number of stitches at the center of the neck line ⑨. These stitches must be knitted with waste yarn and removed from the machine.

(13) For the remaining shoulder slope repeat the same procedure as in (10) and knit several rows with waste yarn and remove from the machine.

for neck when knitting is taken off with waste put these needles right back to work.



FRONT:

(1) Knit straight up to the under arm-hole ① – ③ following the same procedure as in (1)–(6) of the Back section.

(2) Shape both arm-holes by decreasing stitches up to the centre neck line ④. To work both sides separately, read the number of stitches on the opposite side of the Carriage, according to the contour line on the Pattern Paper, and knit several rows with waste yarn afterwards removing the section from the needle bed.

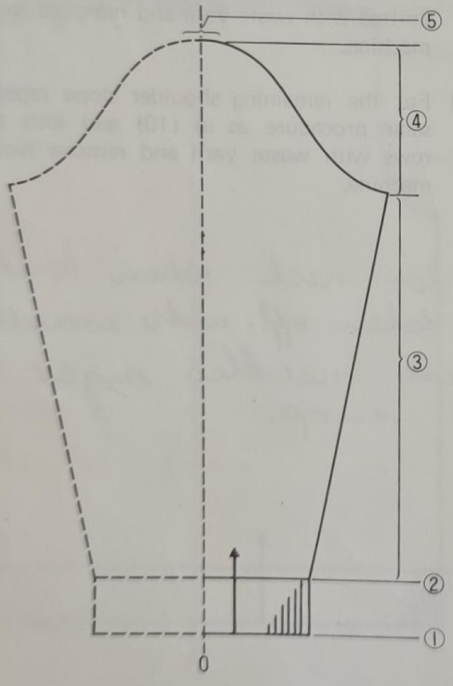
(3) Knit up to the shoulder point decreasing stitches for the front neck line ⑦.

(4) Slope the shoulder by Partial knitting while decreasing the front neck line. Knit several rows with waste yarn ⑨, and remove from the machine.

(5) Return the Pattern Paper to the centre neck-line ④ and pick up all stitches you previously removed from the machine.
(Refer to Page 24 for picking up stitches.)

(6) Shape the front neck line by binding-off ⑦ and decreasing respectively. From the shoulder point slope the shoulder by Partial knitting while decreasing the front neck line.

(7) Knit several rows with waste yarn and remove the fabric from the machine.

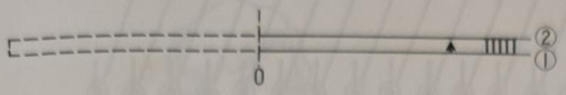


SLEEVE:

(1) Arrange the needles following the same procedure as in (1)–(4) of the Back section.

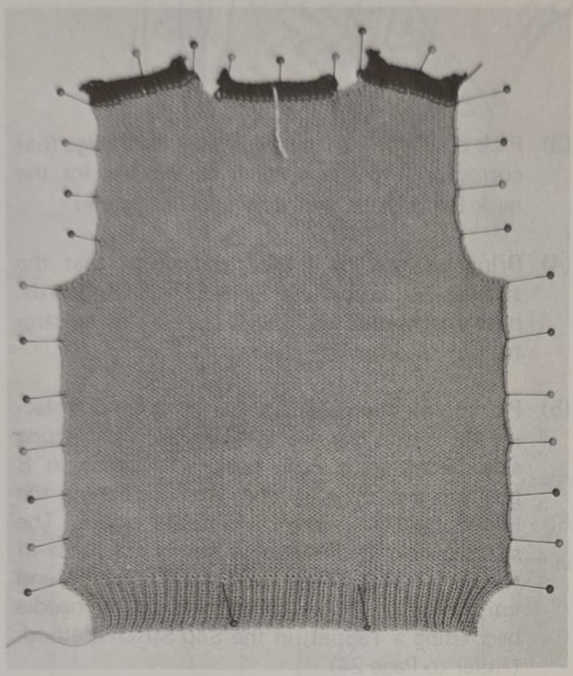
(2) Cast-on and knit the cuff band ① – ② in 1K. 1P. rib. Set the Ribber Stitch Dial referring to the section "Stitch Dial Setting Guide", in the Ribber Instruction Book.

(3) Knit up to the under sleeve cap, increasing stitches on both sides ③. (Refer to page 19)



(4) Shape the sleeve cap by binding-off and decreasing ④–⑤.

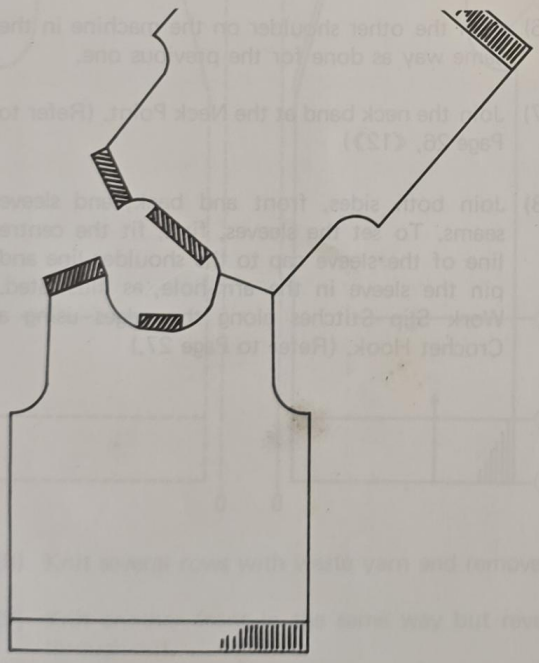
(5) Knit the second sleeve in the same manner as in (1)–(4), above.



NECK BAND:

(1) Before knitting the neck band, the Stitch Scale must be changed to that which has a number of about 10% more than that of the previous one used. This is because the neck band is knitted in rib stitch.
For example:
Original gauge for garment:
28 stitches
Gauge with a 10% addition for the neck band: 31 stitches

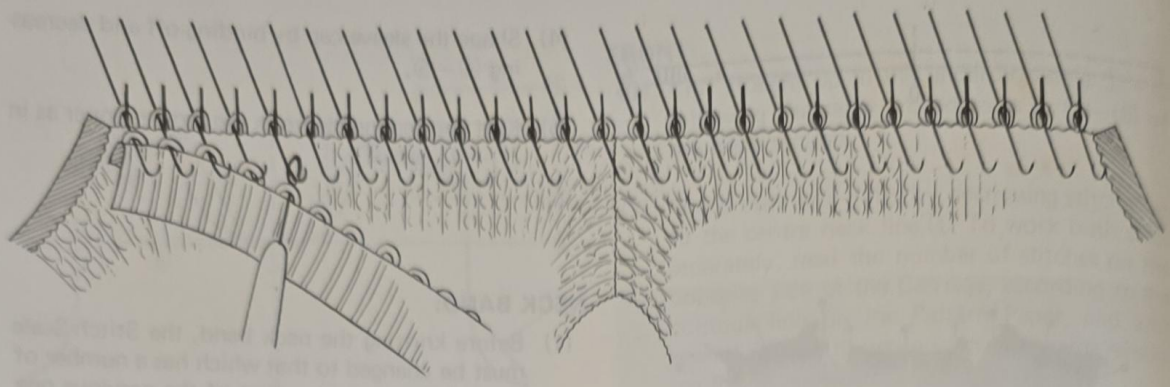
(2) Knit straight following the contour lines on the Pattern Paper ①–②. Afterwards, transfer the stitches from the Ribbing Attachment onto the main machine using a Double-eye Transfer Tool and knit several rows with waste yarn on the main machine before removing the neck band from the machine.

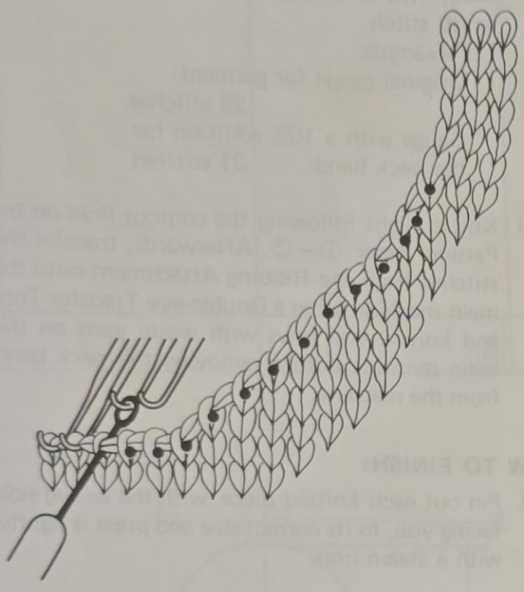


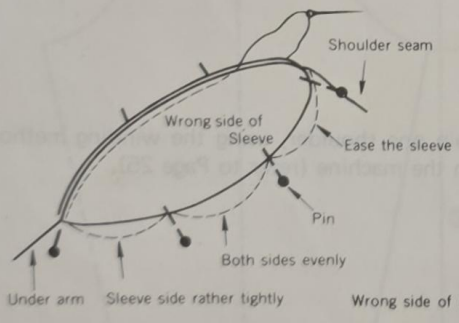
HOW TO FINISH:

(1) Pin out each knitted piece, with the wrong side facing you, to its correct size and press it lightly with a steam iron.

(2) Join one shoulder, using the winding method, on the machine (refer to Page 25).







(3) Pick up evenly stitches along the neck edge that correspond to the number of stitches for the neck band, with the right side facing you.

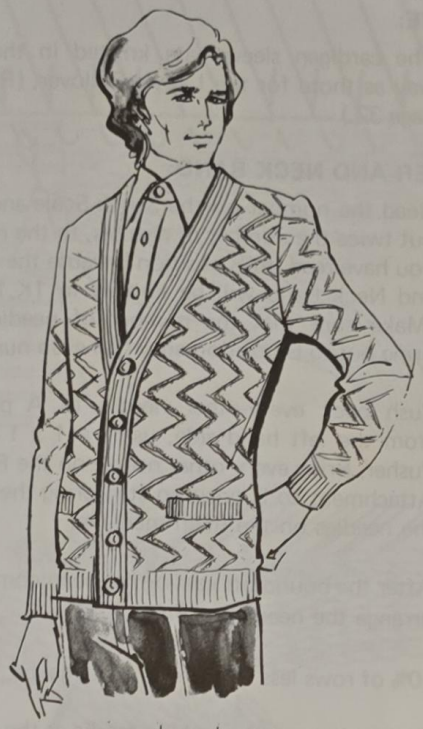
(4) Bring all needles to D position so that the stitches will be behind the latches. Afterwards, push the needles back to C position being careful not to drop any stitches.

(5) Pick up all stitches along the neck band replacing them into the needle hooks with the wrong side facing you. Push back all needles to B position and those stitches that are behind the latches will fall over the needle hooks. The stitches now in the needle hooks are those of the neck band. Re-set the Stitch Dial to 10 and knit one row. Finish the stitches on the needle bed, using a Tappet, in the Slip Stitch Method. (Refer to Page 24)

(6) Join the other shoulder on the machine in the same way as done for the previous one.

(7) Join the neck band at the Neck Point. (Refer to Page 26, 《12》)

(8) Join both sides, front and back, and sleeve seams. To set the sleeves, first, fit the centre line of the sleeve cap to the shoulder line and pin the sleeve in the arm-hole, as illustrated. Work Slip Stitches along the edges using a Crochet Hook. (Refer to Page 27.)

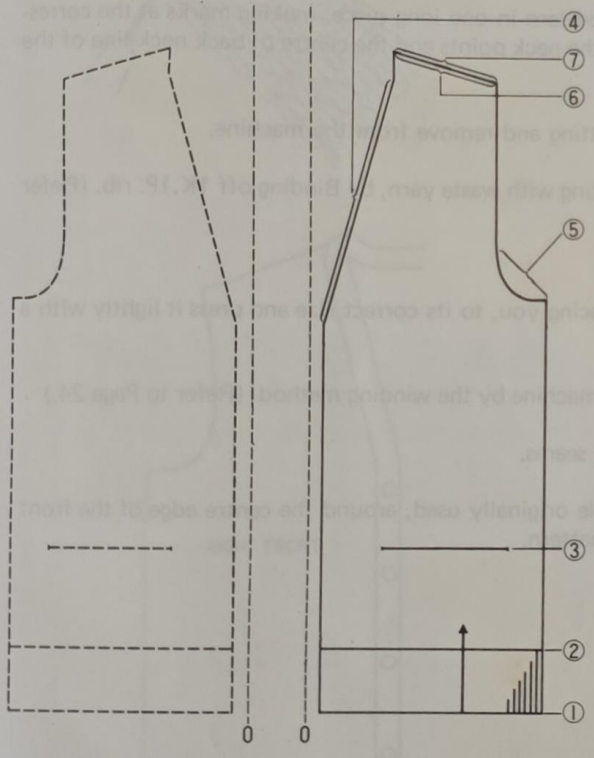


Man's Cardigan: How to Knit

BACK:

* To knit the back of the man's cardigan please refer to the section concerning the method to knit the back of the Lady's Pullover.

Note: * After bringing the needles to B position, arrange the needles according to the diagrams on Page 52 of the Ribbing Attachment Instruction Book, and cast-on.



FRONT:

(1) For the front of the cardigan, you must knit two separate sections (left front and right front).

(2) Read the number on the Stitch Scale at the crossing point with the contour line on the Pattern Paper ①.

(3) Bring to B position the same number of stitches on either side of 0 on the needle bed of the main machine.

(4) Using the 1 x 1 Needle Pusher, push back every-other needle to A position. Bring every-other needle on the Ribbing Attachment to B position staggering them with the needles on the main machine. (Refer to Page 52 of the Ribbing Attachment Instruction Book.)

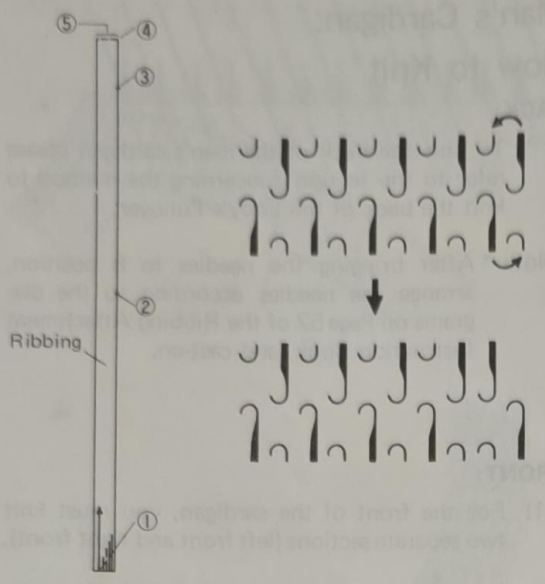
(5) Cast-on and knit the waist band in 1K.1P. rib. Set the Ribber Stitch Dial, referring to the section "Stitch Dial Setting Guide", in the Ribber Instruction Book.

(6) Knit straight up to the under neck line shaping, and make a mark. Shape the neck line decreasing stitches and the arm-hole by binding-off and decreasing up to the Shoulder Point.

(7) Slope the shoulder ⑥ by Partial knitting making sure that the Carriage is on the opposite side of the Shoulder Point. (While you are sloping the shoulder continue to decrease stitches for the neck line.)

(8) Knit several rows with waste yarn and remove from the machine ⑦.

(9) Knit another front in the same way but reverse the shapings by reading right for left and vice versa through-out.



SLEEVE:

* The cardigan sleeves are knitted in the same way as those for the Lady's Pullover. (Refer to Page 32.)

BORDER AND NECK BAND:

(1) Read the number on the Stitch Scale and bring out twice the number of needles, to the number you have read, to B position because the Border and Neck Band will be knitted in 1K.1P. rib. (Make sure that the number of needles you bring out to B position are of an even number.)

(2) Push back every-other needle to A position from the left hand side, using a 1 x 1 Needle Pusher. Bring every other needle on the Ribbing Attachment to B position staggering them with the needles on the main machine.

(3) After the bound-off cast-on has been completed, arrange the needles as illustrated.

(4) Re-set the Row Number Dial on the Knit Contour about 10% of rows less than the original gauge.

(5) The border is to be knit twice the length of the pattern in one long piece, making marks at the corresponding positions to the under neck-line shaping, the neck points and the centre of back neck-line of the front and the back.

(6) Knit several rows with waste yarn in Tubular knitting and remove from the machine.

(7) Finish the open stitches, knit off in Tubular knitting with waste yarn, by Binding off 1K.1P. rib. (Refer to Page 25.)

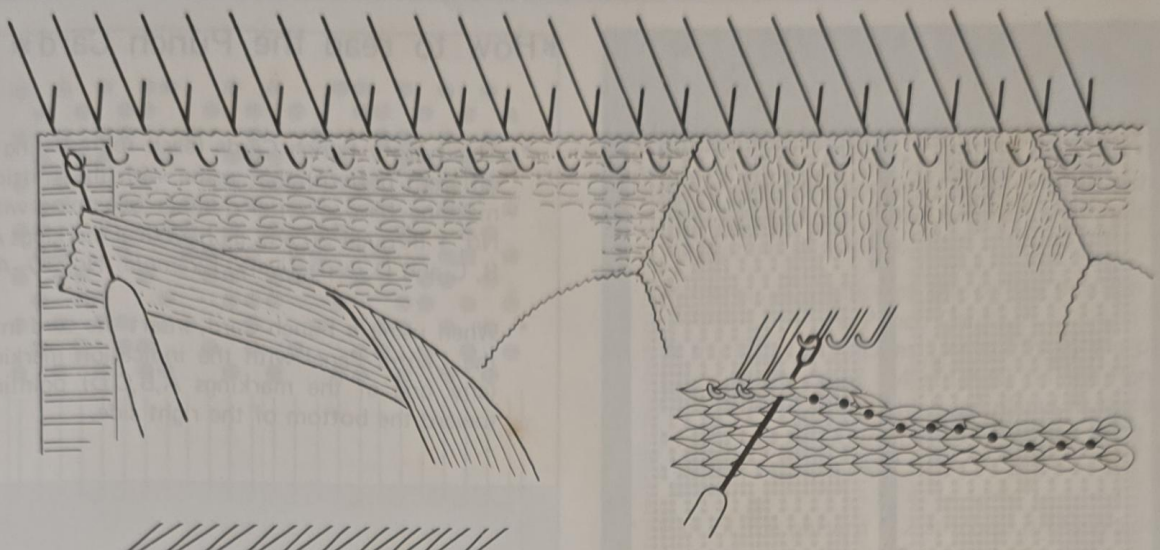
HOW TO FINISH:

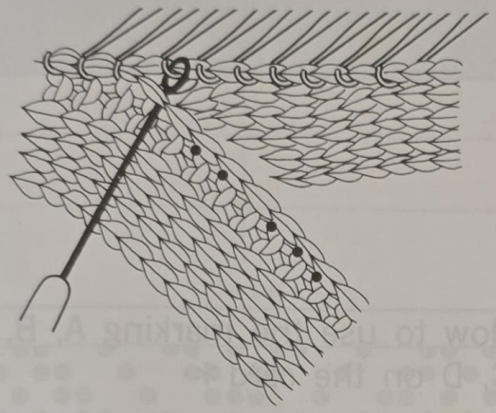
(1) Pin out each knitted piece with the wrong side facing you, to its correct size and press it lightly with a steam iron.

(2) Join both shoulders, back and both fronts, on the machine by the winding method. (Refer to Page 24.)

(3) Join both sides, back and both fronts, and sleeve seams.

(4) Read the number of stitches using the Stitch Scale originally used, around the centre edge of the front and the neck edge of the front and back on the pattern.





(5) Pick up the same number of stitches as you read, from the centre edge of the front and neck edge of the front and back of the fabric, on the machine with the right side facing you.

Note: * If you need more than 200 needles to join, work separately at the centre of the back neck edge.

(6) Pick up the same number of stitches from the border and neck band on the machine, fitting the marks you made at the under neck-line shaping, the neck points and the centre of back neck-line. Now, double stitches are on each needle.

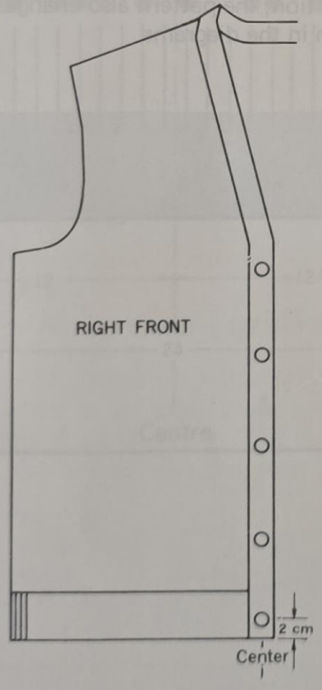
(7) Bring all needles to D position so that the stitches will be behind the latches, and set the Russel Levers to **II** and the Stitch Dial 2 numbers higher than the one previously used.

(8) Knit one row with the main yarn and finish the stitches on the needle bed in the Slip Stitch Method, using a Tappet. (Refer to Page 27.)

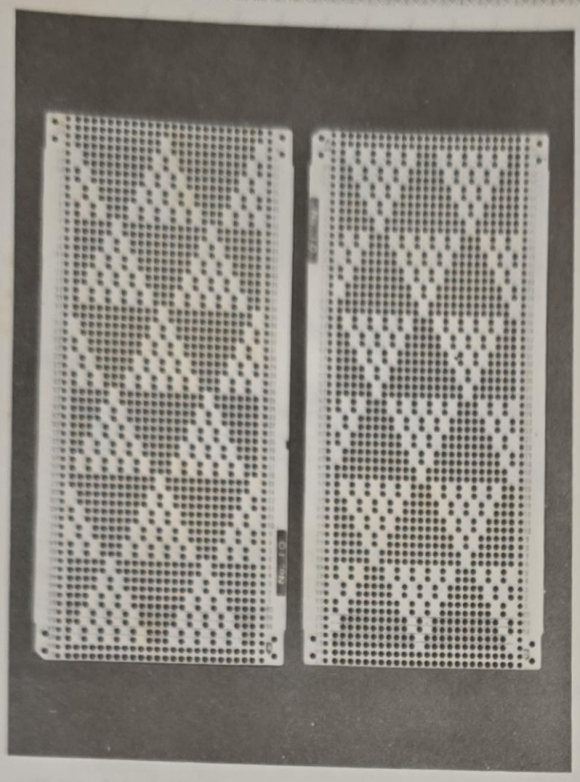
(9) Set in the sleeves.

(10) Make buttonholes on the border of the left front. (Refer to Page 27)

(11) Press the complete garment lightly with a steam iron and sew buttons on the border of the right front.



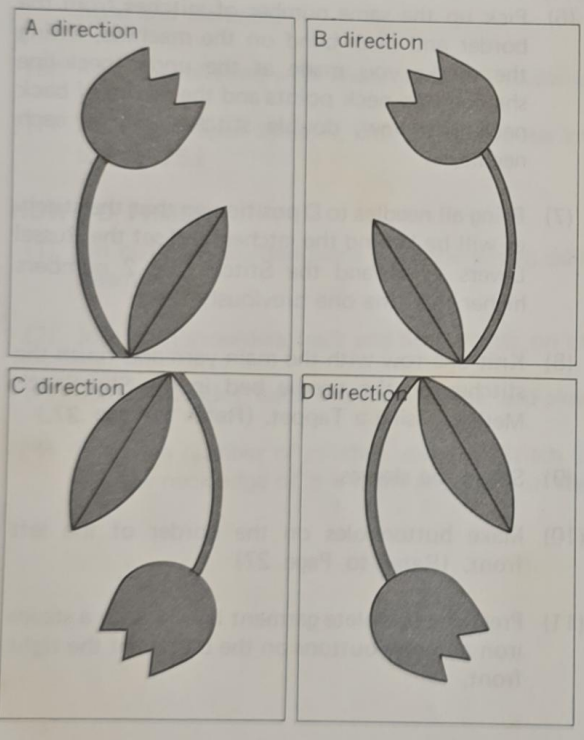
7. PATTERN KNITTING



How to read the Punch Card

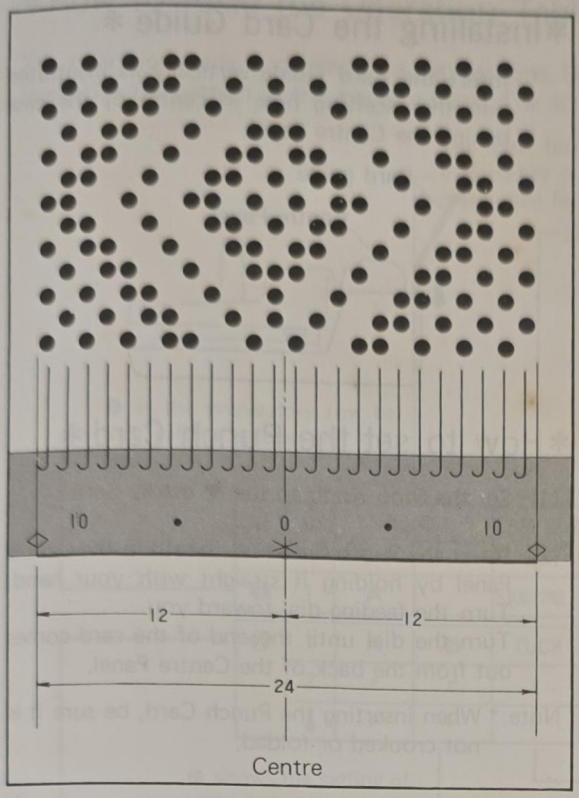
* The twenty Punch Cards (each representing a different pattern) that come with the knitting machine have a serial number beginning with No. 1 through 20 and alphabetical markings A, B, C and D respectively. Example: No. 10–A

* When using a Punch Card, insert the card into the Centre Panel with the indication marking (any one of the markings A,B,C,D) pointing toward the bottom of the right side.



*How to use the marking A, B, C, D on the card *

* "A" direction is the basic pattern. By changing the direction, the pattern also changes direction as shown in the diagrams.



*The Relation between the Pattern Marks on the Needle Bed and Patterns *

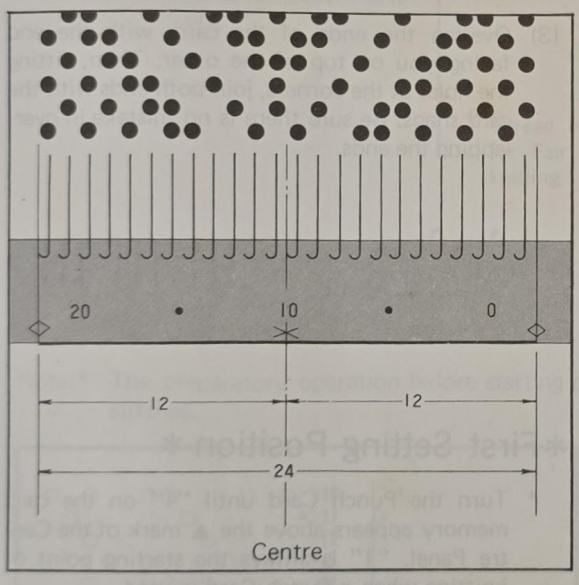
On the needle bed are the × marks and ◇ marks in addition to the numbers that indicate the number of needles.

× mark.....Indicates the centre position of the Punch Card.

◇ mark.....Indicates the width of the pattern (24 stitches) on the Punch Card which is knitted in the position between the ◇ and ◇ marks.

* Half of the pattern (12 stitches) on each side is indicated between the marks × and ◇.

* When the garment is decreased in size and moved away from the centre of the needle bed, these markings help adjust the pattern to its original position.

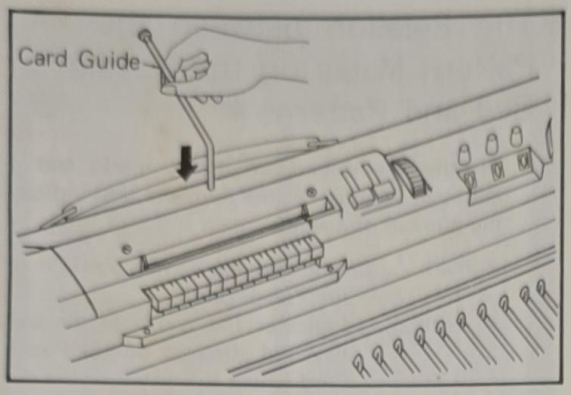


*How to use the Vinyl Tape *

(1) When knitting a garment of which the position of the motif pattern has been decided, you must read the number of stitches on the Stitch Scale and determine where on the needle bed the cast-on should be made. If the 0 on the Pattern Paper differs from the 0 on the needle bed, move the vinyl tape to either side so that both 0's on the Pattern Paper and needle bed conform with each other. Afterwards, cast-on the required number of stitches already read on the Stitch Scale.

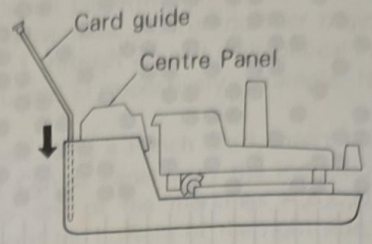
(2) In the case of knitting with more than 100 stitches on one side, the 0 on the vinyl tape must be moved to either side so as you will have an equal number of stitches on both sides of 0.

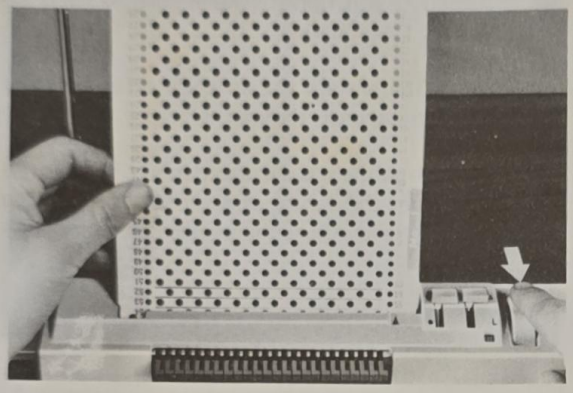
When the tape does not move laterally, move it after removing the needle retainer. (Refer to page 90 for the method on removing the needle retainer.)



*Installing the Card Guide *

* Insert the Card Guide vertically as illsutrated into the receiving hole in centre of the case behind the Centre Panel.



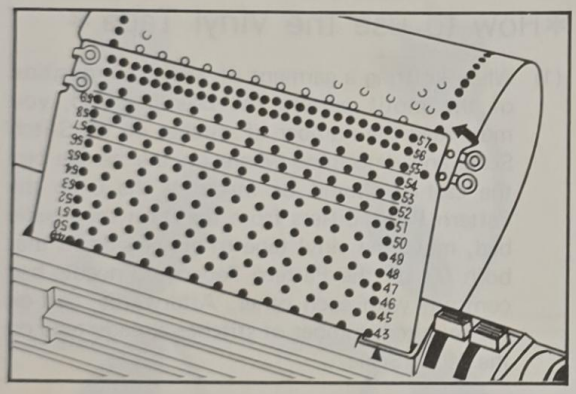


*How to set the Punch Card *

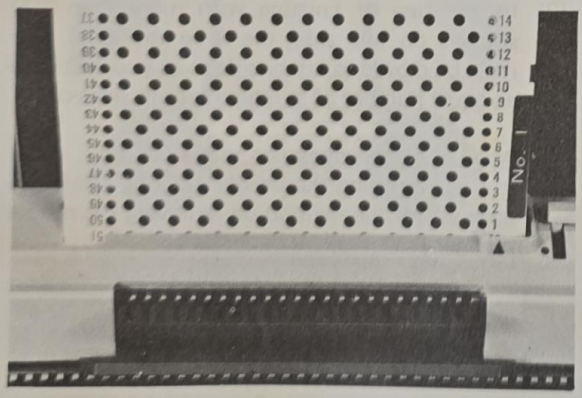
(1) Set the Stop Knob to the ▼ mark.

(2) Insert the Punch Card into the slit in the Centre Panel by holding it straight with your hand. Turn the feeding dial toward you.
Turn the dial until the end of the card comes out from the back of the Centre Panel.

Note:* When inserting the Punch Card, be sure it is not crooked or folded.



(3) Overlap the ends of the card, with the end facing you on top of the other. Then, fitting the holes at the corners, join both ends with the card snaps. Be sure there is no mistake in overlapping the ends.



*First Setting Position *

* Turn the Punch Card until "1" on the card memory appears above the ▲ mark of the Centre Panel. "1" is always the starting point of knitting when a Punch Card is used.

*How to Read the Operation Table *

The operation table is divided into two sections, Order ❶ and Order ❷. Order ❶ is the preparatory step to memorize the pattern in the memory bank. The actual pattern knitting begins with Order ❷.

The yarn feeder is divided into two sections, each indicated by ① and ②. Use the mentioned yarn in the mentioned feeder.

Set the cam lever to "STOCKINET".

Set the Russel lever to I.

Set the side levers to ▲ mark.

Set the stop knob to ● mark.

Set the L knob to S.

This column shows the direction in which the carriage is to be moved and the number of rows to be knitted.

❶ is the preparatory row before pattern stitches are knitted.

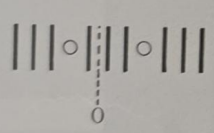
ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	I	A		STOCKINET	I	▲	●	S	→
❷	I	A	B	TUCK	II	▲	▼	S	←
	2	〃	〃	〃	〃	〃	〃	〃	→
	⬇	〃	〃	〃	〃	〃	〃	〃	⇄)※

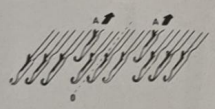
❷ shows the setting of parts for pattern knitting.

The setting of these parts will differ according to the pattern to be knitted.

※ = Repeat

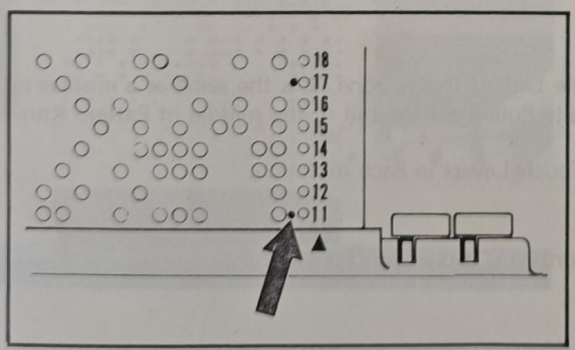
Thread with mentioned yarn for Fair Isle and punch lace knitting.





Select the needles to knit and the needle to rest beginning at the zero (0) mark in the center of the needle bed. The circle (○) indicates the needles to be pushed back to A position and the bar (I) mark the needles to be used.

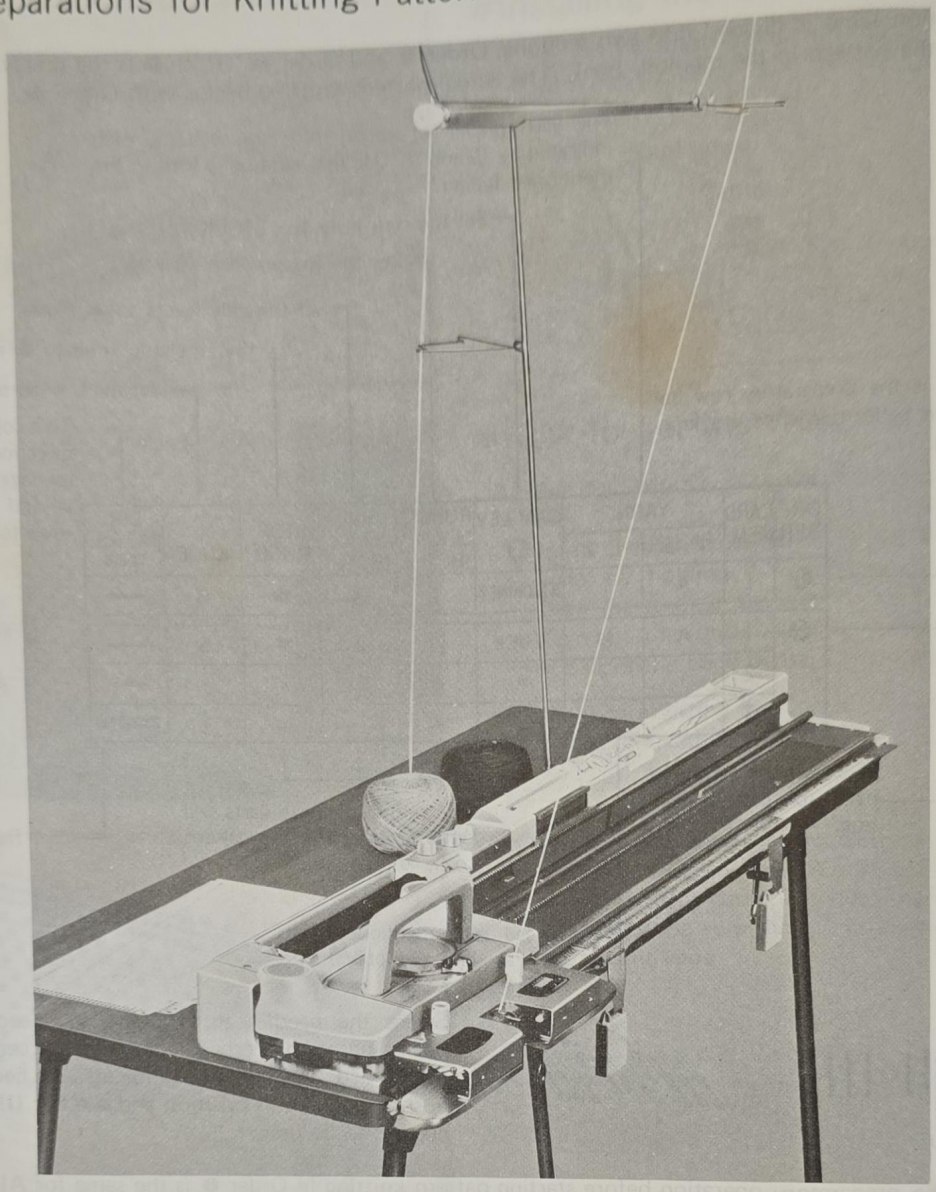
Note:* The preparatory operation before starting pattern knitting in Order ❶ is the same for ALL pattern stitches.



Indication as to position of contrast yarn change.

* The Punch Cards include those on which a dot mark appears, positioned at the end of a row. This mark inidcates when the yarn should be changed in knitting a contrast pattern. (See the illustration on the left.)

*Preparations for Knitting Pattern Stitches *

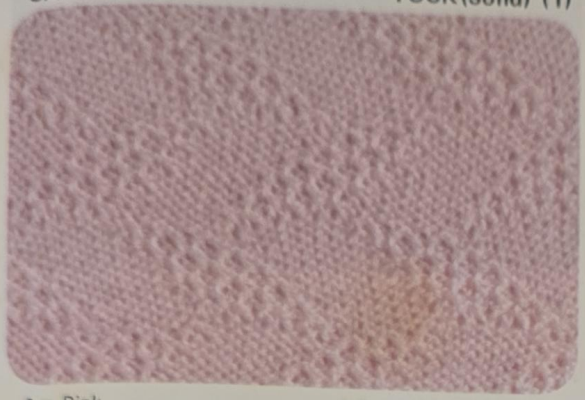


(1) Before practicing the pattern knitting, knit 7—8 rows of stockinet, ending with the Carriage on the left side of the needle bed.

(2) Caution on pattern knitting.
* Do not pull the Carriage off the rail on the needle bed. If this is done, it is the same as a mistake in knitting. Refer to "When the Carriage is Accidentally Pulled off the rail in the middle of Pattern Knitting" on page 88.
* When operating the Carriage, move it passed the Touch Levers in each direction.
* Move the Carriage at an even pace.
* Put accessory weights on both sides of the fabric.
* Except in special cases, it is recommended to use ordinary 4 ply yarn for practice.

TUCK STITCH PATTERN

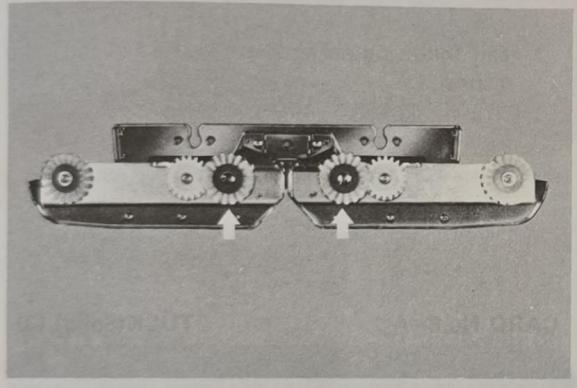
CARD No.12–A **TUCK (Solid) (1)**

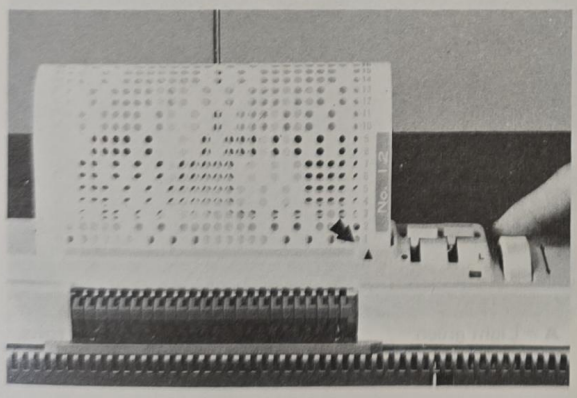


A = Pink

1 Pat. = 12 sts, 24 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	⟶
❷	1	A		TUCK	|	▲	▼	S	⟵
	2	〃		〃	〃	〃	〃	〃	⟶
	↓	〃		〃	〃	〃	〃	〃	⇄ ✻





Tuck stitches are formed when selected needles hold the yarn but do not knit. The new yarn forms a loop over the yarns held on the needles on the subsequent row, making Tuck stitches.

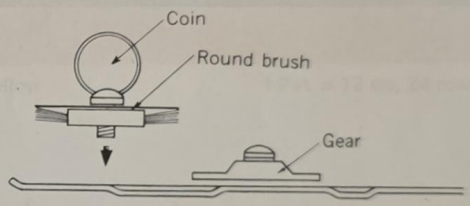
* Attach the accessory Weights to both edges of the knitted fabric.

Install the Round Brushes for Tuck Knitting.

(1) Remove the Carriage Arm and turn it over.

(2) Take two Round Brushes from the Accessory Box.

(3) Screw the Round Brushes into the holes located next to the white Fabric Gears, as illustrated. Tighten the screws with a coin.



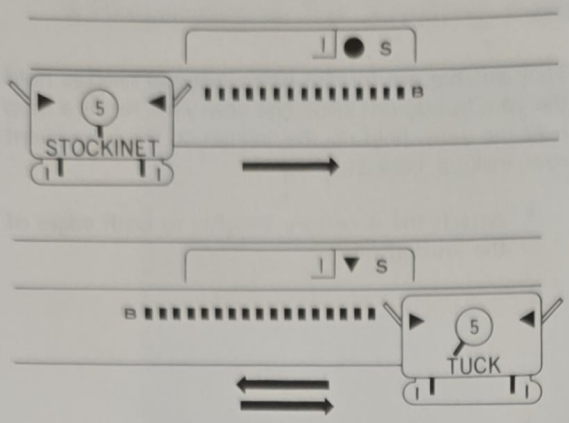
How to knit patterns following the instructions on the operation table.

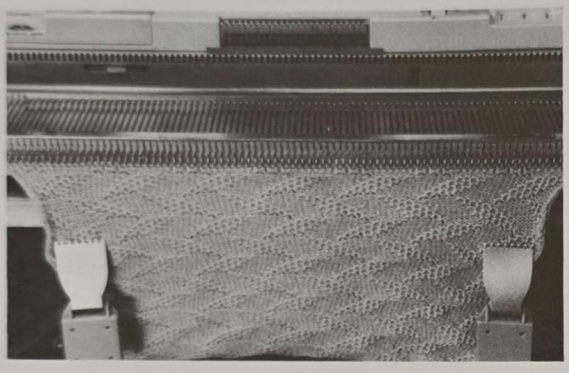
(1) Insert Punch Card No.12 into the Centre Panel with the A mark at the lower right. Join both ends using the Card Snaps. (Refer to Page 40.)

(2) Turn the Feeding Dial until the card memory No.1 appears above the ▲ mark on the Centre Panel.

Note: * If the Stop Knob is set to the ● mark, the Punch Card will not feed. Do not try to pull the card by force, but be sure to set the Stop Knob to the ▼ mark before turning the dial.

* When inserting the Punch Card be sure that it is neither crooked nor folded.





(3) Thread the yarn through the Yarn Feeder ①.

(4) Set each regulating part of the Carriage following Order ❶ of the operation table. Knit one row by moving the Carriage in the direction indicated by the arrow.

* The operation in Order ❶ is a preparatory step before knitting in pattern stitch. Therefore, this one row of Stockinet is not counted in the required number of rows of pattern stitch.

(5) Change the setting of the regulating parts of the Carriage following Order ❷ of the operation table and start knitting.

Note: * If the end stitches on the fabric are incompletely knitted, depending on the material and pattern, set both Russel levers to the II mark.

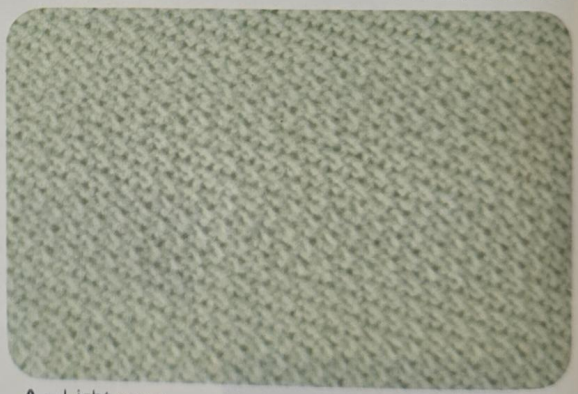
Continue knitting, bringing 2 needles to D position at the side opposite the Carriage. (For partial knitting, the needles are brought out to C position.)

* The following patterns are knitted in the same manner.

CARD No.1–A **TUCK(Solid) (2)**

A = Yellow 1 Pat. = 2 sts, 2 rows.

CARD No.8–A **TUCK(Solid) (3)**

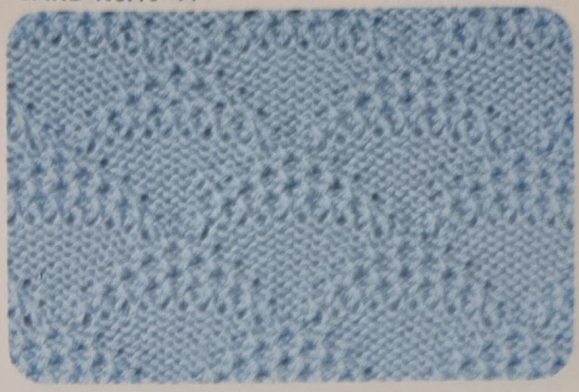


A = Light green 1 Pat. = 3 sts, 18 rows.

CARD No.7–A TUCK(Solid) (4)

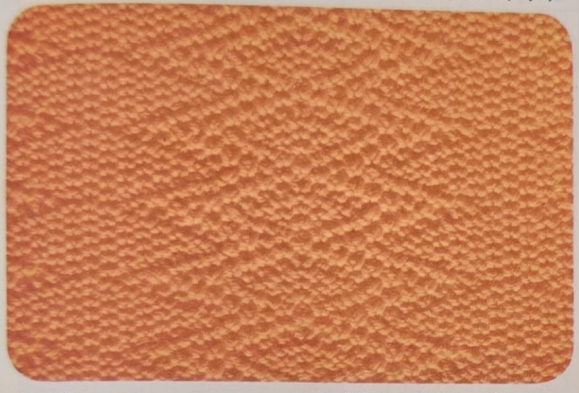
A = Green 1 Pat. = 2 sts, 4 rows.

CARD No.10–A TUCK(Solid) (5)



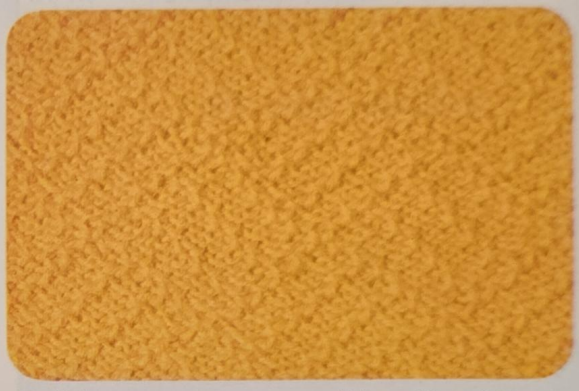
A = Light blue 1 Pat. = 12 sts, 20 rows.

CARD No.14–A TUCK(Solid) (6)



A = Orange 1 Pat. = 24 sts, 12 rows.

CARD No.9–A TUCK(Solid) (7)

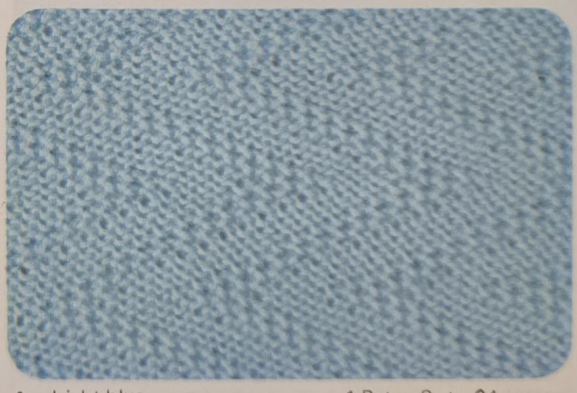


A = Yellow 1 Pat. = 12 sts, 24 rows.

CARD No.3–A TUCK(Solid) (8)

A = Emerald green 1 Pat. = 4 sts, 8 rows.

CARD No.11–A TUCK(Solid) (9)

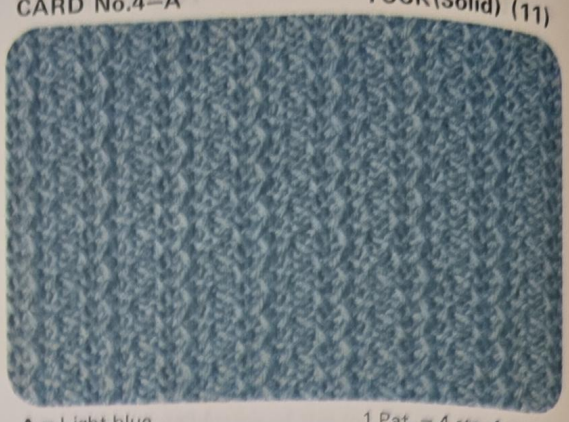


A = Light blue 1 Pat. = 8 sts, 24 rows.

CARD No.18–A TUCK(Solid) (10)

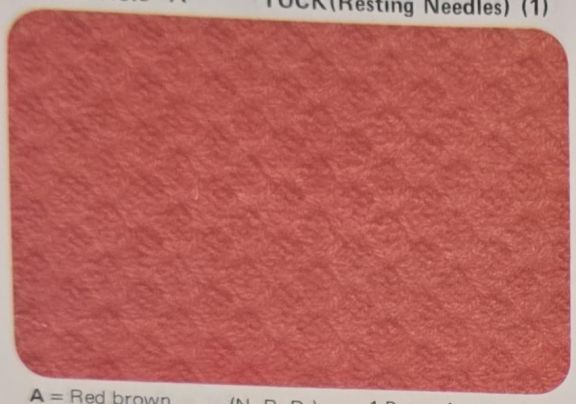
A = Light green 1 Pat. = 24 sts, 44 rows.

CARD No.4–A TUCK(Solid) (11)

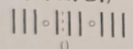


A = Light blue 1 Pat. = 4 sts, 4 rows.

CARD No.3–A TUCK(Resting Needles) (1)

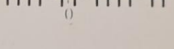


A = Red brown (N. R. D.) 1 Pat. = 4 sts, 8 rows.



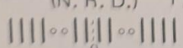
CARD No.4–A TUCK(Resting Needles) (2)

A = Mustard (N. R. D.) 1 Pat. = 6 sts, 4 rows.



CARD No.7–A TUCK(Resting Needles) (3)

A = Green (N. R. D.) 1 Pat. = 6 sts, 4 rows.

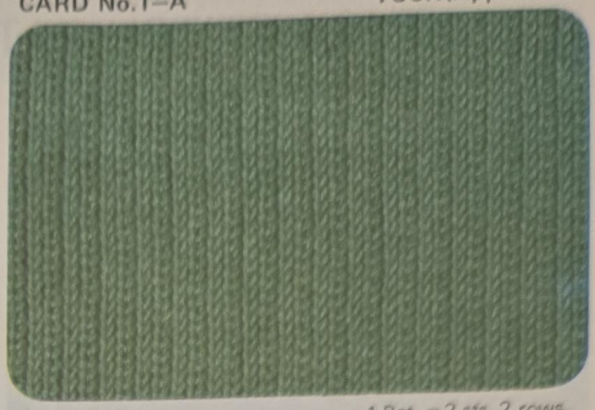


CARD No.7–A　TUCK(Appli.) (1)

A = Yellow　1 Pat. = 2 sts, 4 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	⟶
❷	1	A		TUCK	|	▲	▼	S	⟵
	2	〃		STOCKINET	〃	〃	〃	〃	⟶
	⇩	〃		※	〃	〃	〃	〃	⇄ ※

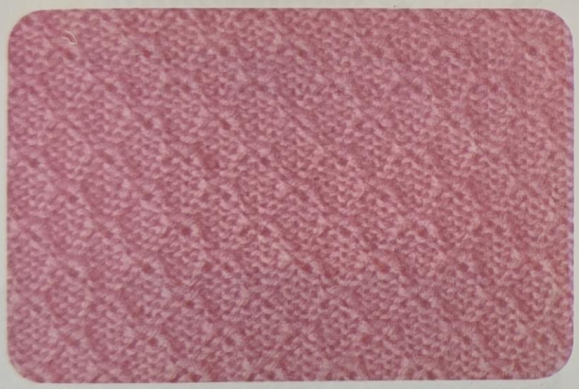
CARD No.1–A　TUCK(Appli.) (2)



A = Light Green　1 Pat. = 2 sts, 2 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	⟶
❷	1	A		TUCK	|	▲	●	S	⟵
	〃	〃		STOCKINET	〃	〃	〃	〃	⟶
	〃	〃		※	〃	〃	〃	〃	⇄ ※

CARD No.3–A　TUCK(Appli.) (3)



A = Pink　1 Pat. = 4 sts, 8 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	⟶
❷	1	A		TUCK	|	▲	▼	S	⟵) 2
	2	〃		〃	〃	〃	〃	〃	⟶
	3	〃		STOCKINET	〃	〃	〃	〃	⟵) 2
	4	〃		〃	〃	〃	〃	〃	⟶
	⇩	〃		※	〃	〃	〃	〃	⇄ ※

CARD No.3–A　TUCK(Appli.) (4)

A = Blue　1 Pat. = 4 sts, 3 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	⟶
❷	1	A		TUCK	|	▲	●	S	⟵) 2
	〃	〃		〃	〃	〃	〃	〃	⟶
	〃	〃		STOCKINET	〃	〃	〃	〃	⟵
	〃	〃		※	〃	〃	〃	〃	⇄ ※

TUCK STITCH PATTERN IN COLOURS

CARD No.12–A **TUCK(Colours) (1)**

A = Green
B = Yellow

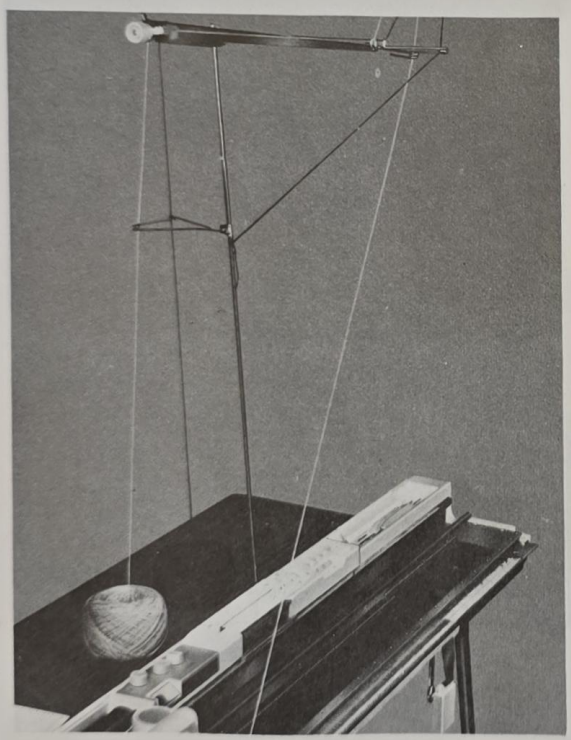
1 Pat. = 12 sts, 24 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	1	▲	●	S	→
❷	1	A		TUCK	1	▲	▼	S	←
	2	〃		〃	〃	〃	〃	〃	→) 2
	3	B		〃	〃	〃	〃	〃	←
	4	〃		〃	〃	〃	〃	〃	→) 2
	⬇	※		〃	〃	〃	〃	〃	⇄)※

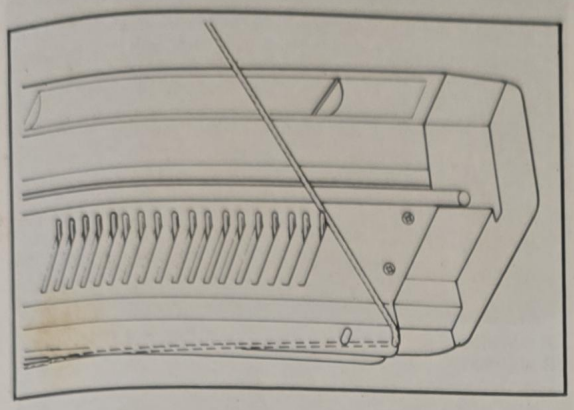
Let's learn pattern knitting using two colours.

* Attach the accessory Weights to both ends of the knitted fabric.

* Install the Round Brushes onto the underside of the Carriage Arm. (Refer to page 43 "TUCK STITCH PATTERN.")

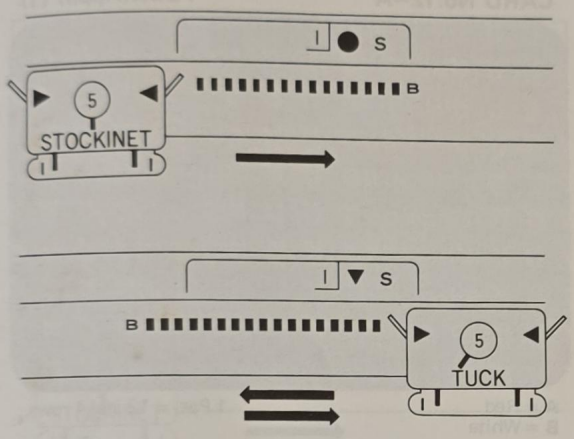


* Thread colour B through the empty side of the Auto-Tension, and place the end into the Yarn Clip.



* As the yarn in the Yarn Feeder is to be changed at the mentioned row, rest the yarn (colour B) as illustrated at the end of the needle bed. Be sure the two yarns do not become entangled with each other. Also be sure the yarn is threaded correctly through the Yarn Feeder to prevent it from coming unthreaded.

* Thread the Yarn Feeder ①.



(1) Insert card No. 12–A in the Centre Panel.

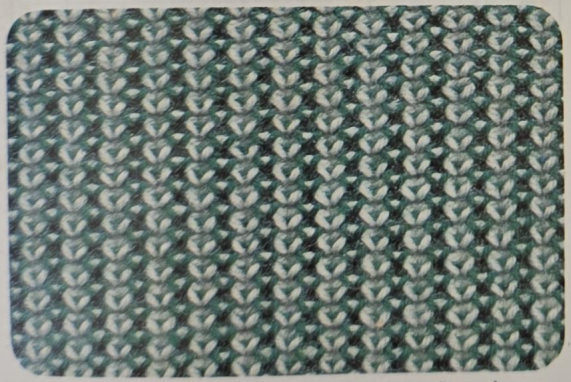
(2) Set the Carriage and the Stop Knob following the instructions in Order ❶ of the operation table and knit 1 row in colour A. (This is a preparatory row for starting pattern knitting.)

(3) Change the setting of the Carriage and the Stop Knob according to Order ❷ and start knitting. Knit 2 rows in colour A then change the yarn to colour B; and knit 2 rows. Continue knitting, changing colours every 2 rows.

Note:* When the end stitches can not be well knitted, due either to the nature of the material or patterns, refer to the Note on page 44.

* The following patterns are knitted in the same manner.

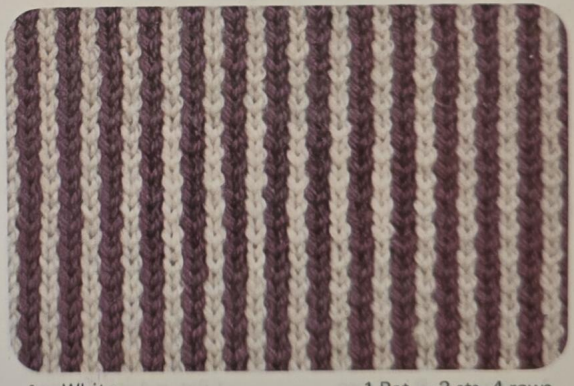
CARD No.7–A **TUCK(Colours) (2)**



A = White
B = Green

1 Pat. = 2 sts, 4 rows.

CARD No.7–A **TUCK(Colours) (3)**



A = White
B = Purple

1 Pat. = 2 sts, 4 rows.

CARD No.1–A — TUCK(Colours) (4)

A = White
B = Brown

1 Pat. = 2 sts, 4 rows.

CARD No.4–A — TUCK(Colours) (5)

A = White
B = Green

1 Pat. = 4 sts, 4 rows.

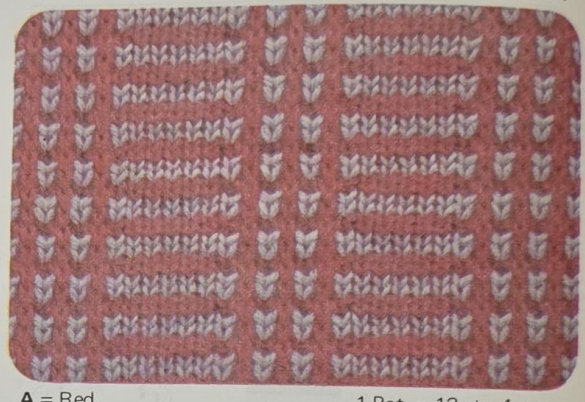
CARD No.3–A — TUCK(Colours) (6)

A = White
B = Cherry red

1 Pat. = 4 sts, 8 rows.

Change the two colours every 4 rows.

CARD No.12–A — TUCK(Appli) (1)



A = Red
B = White

1 Pat. = 12 sts, 4 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	I	A		STOCKINET	|	▲	●	S	⟶
❷	I	A		TUCK	|	▲	●	S	⟵
	〃	〃		〃	〃	〃	〃	〃	⟶) 2
	〃	B		STOCKINET	〃	〃	〃	〃	⟵
	〃	〃		〃	〃	〃	〃	〃	⟶) 2
	〃	※		※	〃	〃	〃	〃	⇄ ※

CARD No.3–A — TUCK(Colours) (7)

A = White **B** = Green
C = Red

1 Pat. = 4 sts, 24 rows.

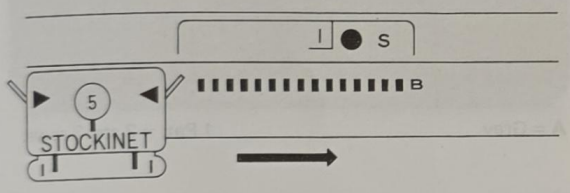
Change the three colours every 4 rows.

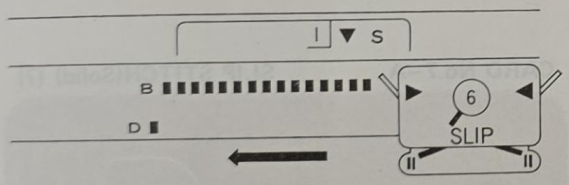
SLIP STITCH PATTERN

CARD No.18–A **SLIP STITCH(Solid) (1)**

A = Emerald green 1 Pat. = 24 sts, 44 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO.RS.)
❶	1	A		STOCKINET	I	▲	●	S	→
❷	1	A		SLIP	II	▲	▼	S	←
	2	〃		〃	〃	〃	〃	〃	→
	↓	〃		〃	〃	〃	〃	〃	⇄ ※





Slip stitch patterns are formed by the yarns crossing at the back of the loops which were not knitted and pulled up by needle selection.

* Attach the accessory Weights to both ends of the knitted fabric.

(1) Insert Punch Card No.18– at (A) direction.

(2) Thread through Yarn Feeder ①.

* The Stitch Dial should be loosened by one number from that number used for Stockinet at this point.

(3) Knit 1 row following instructions in Order ❶ of the operation table.

(4) Change the setting of the Carriage as indicated in Order ❷ of the operation table and continue knitting. At the beginning of every row, bring one end needle, on the side opposite the Carriage, to D position.

* When partial knitting, bring the end needle on the side opposite the Carriage to C position every row.

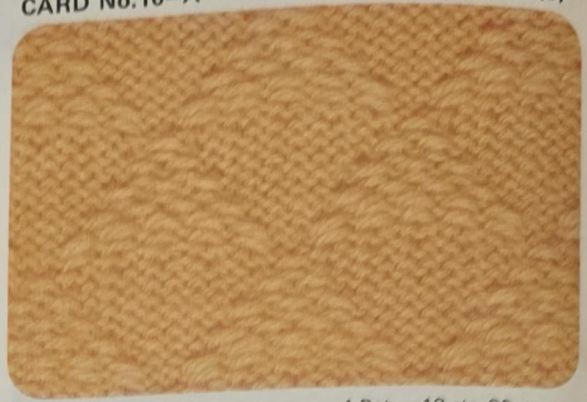
* The following patterns are knitted in the same manner.

CARD No.8–A SLIP STITCH(Solid) (2)

A = Pink

1 Pat. = 3 sts, 18 rows.

CARD No.10–A SLIP STITCH(Solid) (3)



A = Yellow

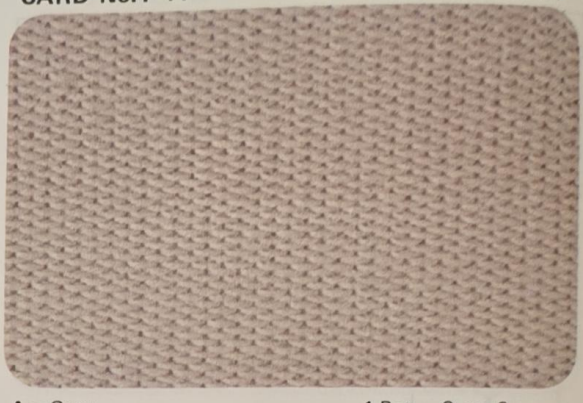
1 Pat. = 12 sts, 20 rows.

CARD No.9–A SLIP STITCH(Solid) (4)

A = Light blue

1 Pat. = 12 sts, 24 rows.

CARD No.1–A SLIP STITCH(Solid) (5)



A = Grey

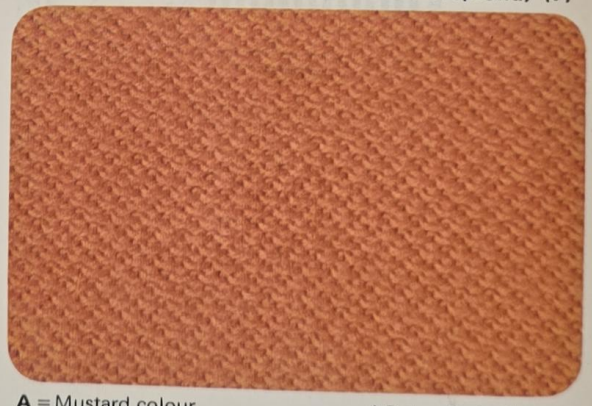
1 Pat. = 2 sts, 2 rows.

CARD No.2–A SLIP STITCH(Solid) (6)

A = Light blue

1 Pat. = 4 sts, 4 rows.

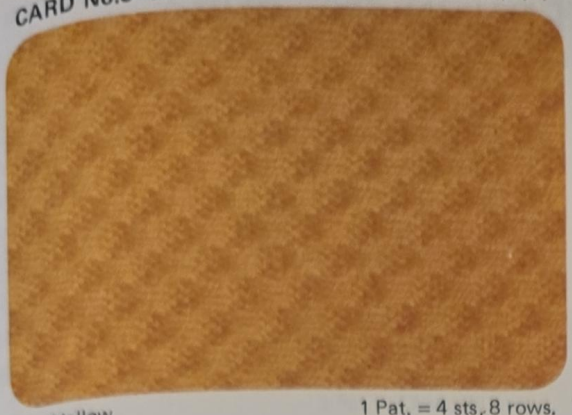
CARD No.7–A SLIP STITCH(Solid) (7)



A = Mustard colour

1 Pat. = 2 sts, 4 rows.

CARD No.3–A SLIP STITCH(Solid) (8)



A = Yellow

1 Pat. = 4 sts, 8 rows.

CARD No.11–A SLIP STITCH(Solid) (9)

A = Brown

1 Pat. = 8 sts, 24 rows.

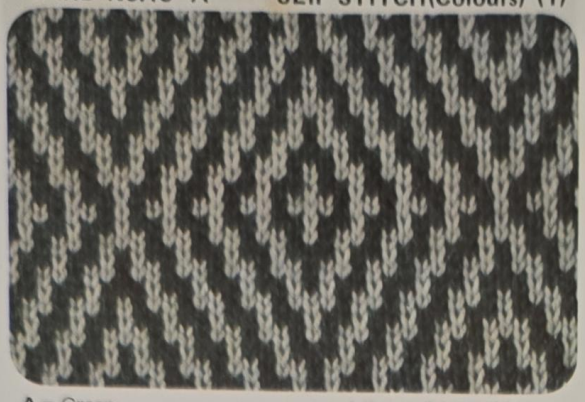
CARD No.12–A SLIP STITCH(Solid) (10)

A = Yellow

1 Pat. = 12 sts, 24 rows.

SLIP STITCH PATTERN IN COLOURS

CARD No.18–A **SLIP STITCH(Colours) (1)**



A = Green
B = Grey

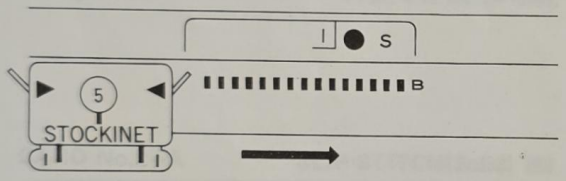
1 Pat. = 24 sts, 44 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO.RS.)
❶	1	A		STOCKINET	|	▲	●	S	→
❷	1	A		SLIP	||	▲	▼	S	←→ 2
	2	〃		〃	〃	〃	〃	〃	
	3	B		〃	〃	〃	〃	〃	←→ 2
	4	〃		〃	〃	〃	〃	〃	
	↓	※		〃	〃	〃	〃	〃	⇄ ※

* Let's practice the slip stitch patterns using two colours.

* Knit changing the yarn in Yarn Feeder ① as done for coloured Tuck knitting.

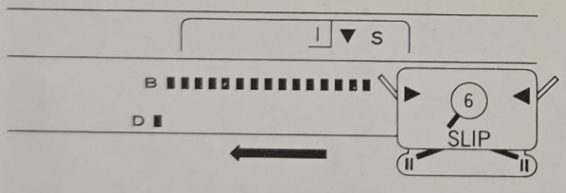
* Attach the accessory Weights to both sides of the knitted fabric.



(1) Insert Punch Card No.18–A in the Centre Panel.

(2) Knit 1 row following the instructions given in Order ❶.

* The Stitch Dial should be loosened by one number from that number used for Stockinet at this point.

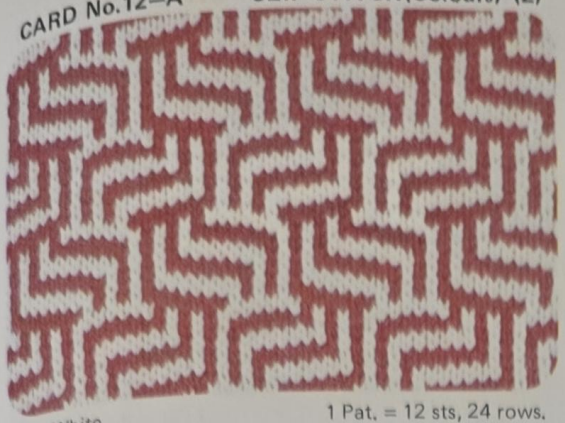


(3) Change the Carriage setting as instructed in Order ❷ of the operation table and bring the end needle at the side opposite the Carriage to D position. Continue knitting.

* When partial knitting, bring the end needle at the side opposite the Carriage to C position every row.

* The following patterns are knitted in the same manner.

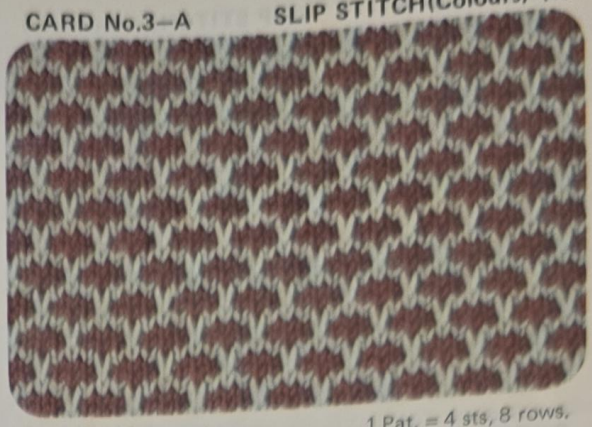
CARD No.12–A SLIP STITCH(Colours) (2)



A = White
B = Red

1 Pat. = 12 sts, 24 rows.

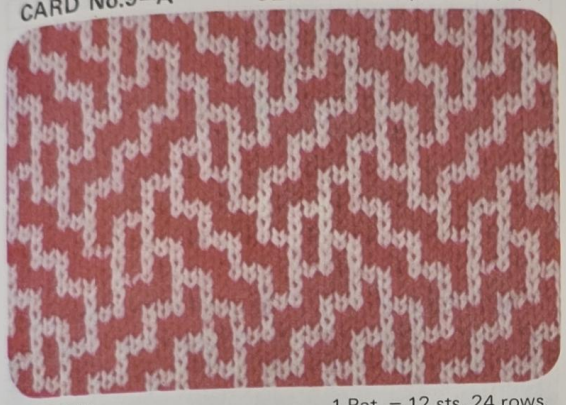
CARD No.3–A SLIP STITCH(Colours) (3)



A = Light blue
B = Brown

1 Pat. = 4 sts, 8 rows.

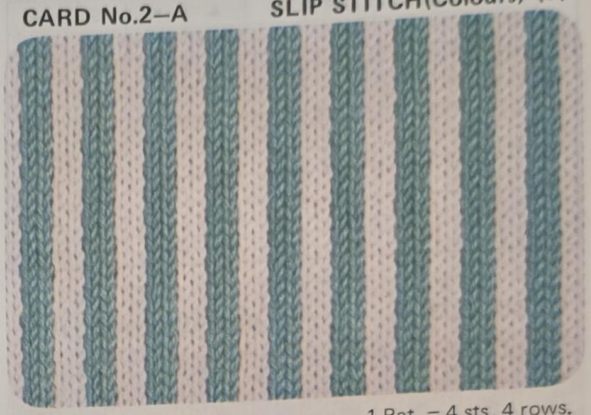
CARD No.9–A SLIP STITCH(Colours) (4)



A = White
B = Red

1 Pat. = 12 sts, 24 rows.

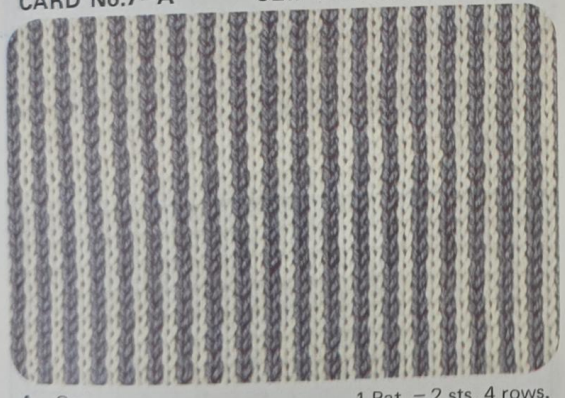
CARD No.2–A SLIP STITCH(Colours) (5)



A = Emerald green
B = White

1 Pat. = 4 sts, 4 rows.

CARD No.7–A SLIP STITCH(Colours) (6)



A = Grey
B = White

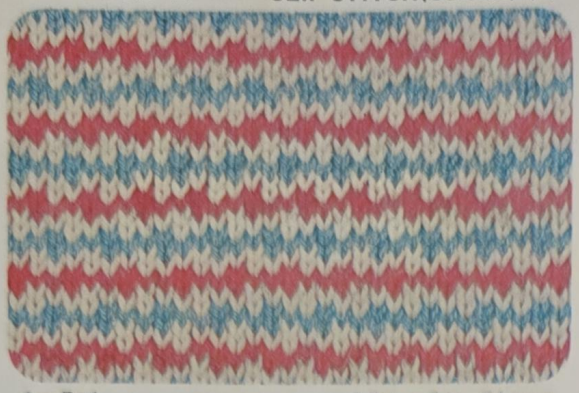
1 Pat. = 2 sts, 4 rows.

CARD No.10–A SLIP STITCH(Colours) (7)

A = Pink
B = Navy blue

1 Pat. = 12 sts, 20 rows.

CARD No.8–A　SLIP STITCH(Colours) (8)

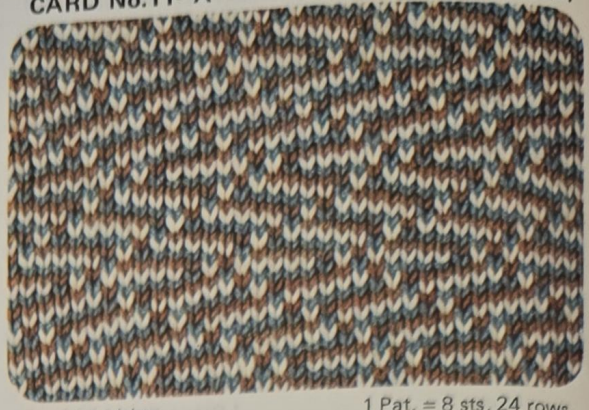


A = Red
B = White
C = Blue

1 Pat. = 8 sts, 24 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	→
❷	1	A		SLIP	||	▲	▼	S	←
	2	〃		〃	〃	〃	〃	〃	→) 2
	3	B		〃	〃	〃	〃	〃	←
	4	〃		〃	〃	〃	〃	〃	→) 2
	5	C		〃	〃	〃	〃	〃	←
	6	〃		〃	〃	〃	〃	〃	→) 2
	7	B		〃	〃	〃	〃	〃	←
	8	〃		〃	〃	〃	〃	〃	→) 2
	⬇	※		〃	〃	〃	〃	〃	⇄)※

CARD No.11–A　SLIP STITCH(Colours) (9)

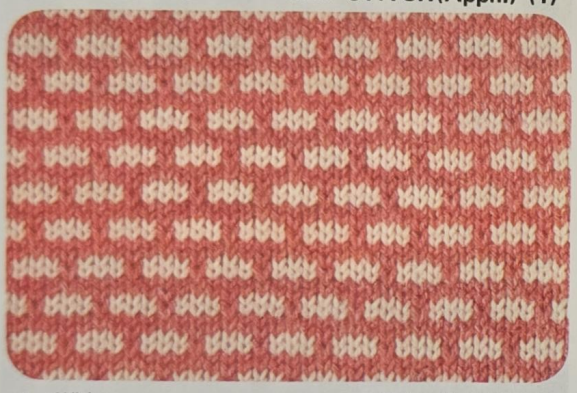


A = Light blue
B = White
C = Brown

1 Pat. = 8 sts, 24 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	→
❷	1	A		SLIP	||	▲	▼	S	←
	2	B		〃	〃	〃	〃	〃	→
	3	C		〃	〃	〃	〃	〃	←
	⬇	※		〃	〃	〃	〃	〃	⇄)※

CARD No.3–A　SLIP STITCH(Appli.) (1)

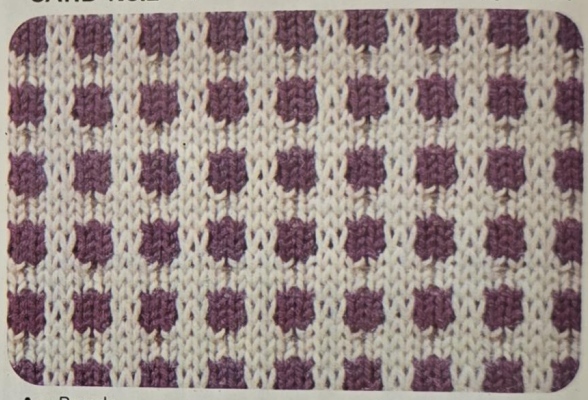


A = White
B = Brick color

1 Pat. = 4 sts, 8 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	→
❷	1	A		SLIP	||	▲	▼	S	←
	2	〃		〃	〃	〃	〃	〃	→) 2
	3	B		STOCKINET	〃	〃	〃	〃	←
	4	〃		〃	〃	〃	〃	〃	→) 2
	⬇	※		※	〃	〃	〃	〃	⇄)※

CARD No.2–A　SLIP STITCH(Appli.) (2)



A = Purple
B = White

1 Pat. = 4 sts, 8 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	→
❷	1	A		SLIP	||	▲	●	S	←
	〃	〃		〃	〃	〃	〃	〃	→) 4
	〃	B		STOCKINET	〃	〃	〃	〃	←
	〃	〃		〃	〃	〃	〃	〃	→) 4
	〃	※		※	〃	〃	〃	〃	⇄)※

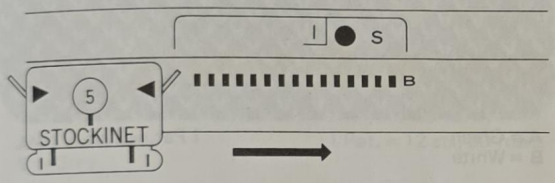
KNIT-IN (FAIR ISLE)

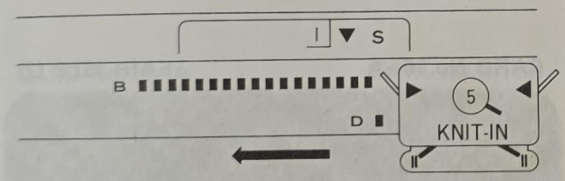
CARD No.20–A **FAIR ISLE (1)**

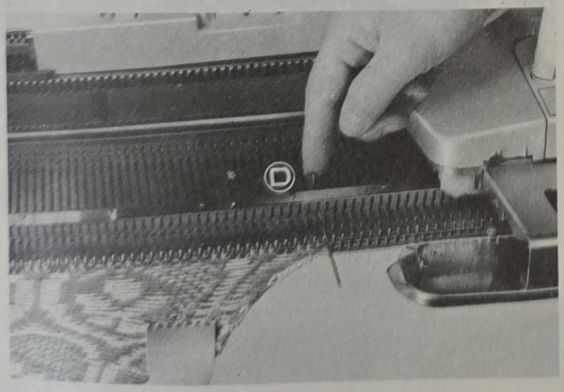
A = Purple
B = Yellowish green

1 Pat. = 24 sts, 54 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	I	▲	●	S	→
❷	1	A	B	KNIT-IN	II	▲	▼	S	←
	2	〃	〃	〃	〃	〃	〃	〃	→
	↓	〃	〃	〃	〃	〃	〃	〃	⇄ ※

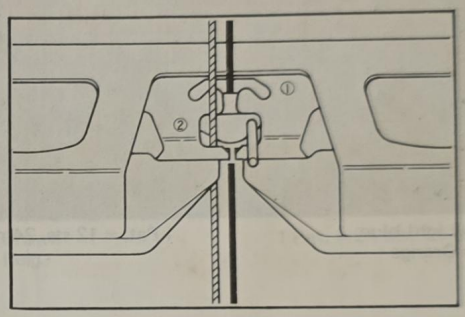






* In Fair Isle knitting, two yarns of different colours are knitted simultaneously during one operation.
* The two yarns are threaded through Yarn Feeder ① and ② respectively.
* Thread the two yarns through the Auto-Tension. Place the yarn of colour B in the Yarn Clip and thread colour A through the Yarn Feeder.
* Knit several rows of Stockinet and stop the Carriage on the left side of the needle bed.
* Attach the accessory Weights to both ends of the knitted fabric.

(1) Insert Punch Card No.20–A into the Centre Panel.
(2) Set the Carriage according to Order ❶ of the operation table.
(3) Knit 1 row with colour A (in Yarn Feeder ①).
(4) Remove colour B from the Yarn Clip and thread it through Yarn Feeder ② as illustrated below. (Be sure that the yarn is threaded to the left of the Guide Pin.)



(5) Change the setting of the Carriage following the instructions given in Order ❷ of the operation table.
(6) Continue knitting by moving the Carriage back and forth each time bringing one end needle on the Carriage side to D position to prevent the knitted patterns from being shaped wrong.
* When partial knitting, bring the end needle at the Carriage side to C position every row.
Using the New Magic Cams and the Point Cams **E** in Fair Isle knitting eliminates the need of your manually pushing the end working needles to D or C position. (Refer to pages 80–81.)

Note: * In decreasing or increasing, move the Point Cams **E** following the stitches to be decreased or increased.
* The weights which are attached on both sides of the fabric are to be moved up every 30–40 rows.
* The following patterns are knitted in the same manner.

CARD No.4–A

FAIR ISLE (2)

A = White
B = Light blue

1 Pat. = 4 sts, 4 rows.

CARD No.15–A

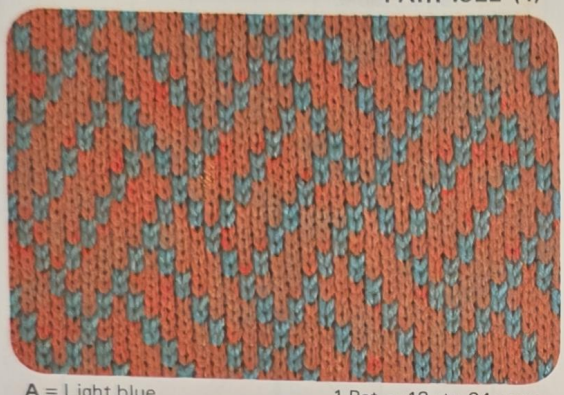
FAIR ISLE (3)

A = Light blue
B = Red

1 Pat. = 12 sts, 24 rows.

CARD No.9–A

FAIR ISLE (4)

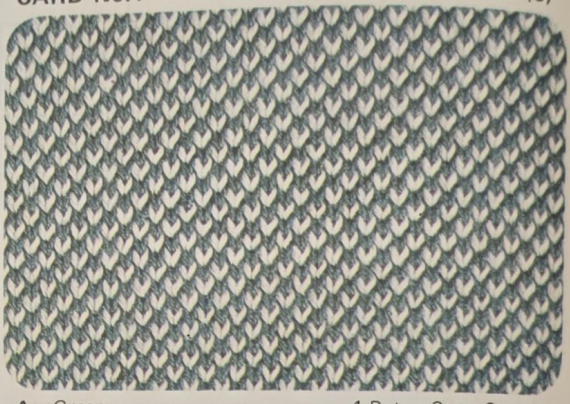


A = Light blue
B = Orange

1 Pat. = 12 sts, 24 rows.

CARD No.1–A

FAIR ISLE (5)

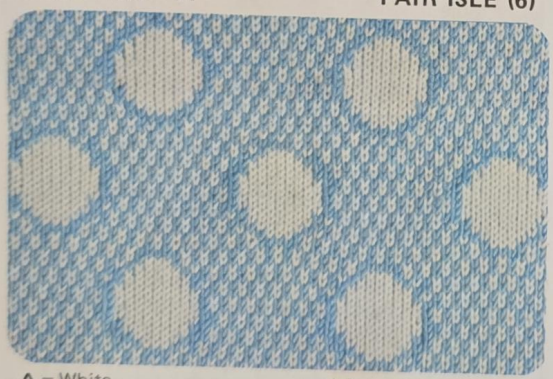


A = Green
B = White

1 Pat. = 2 sts, 2 rows.

CARD No.17–A

FAIR ISLE (6)

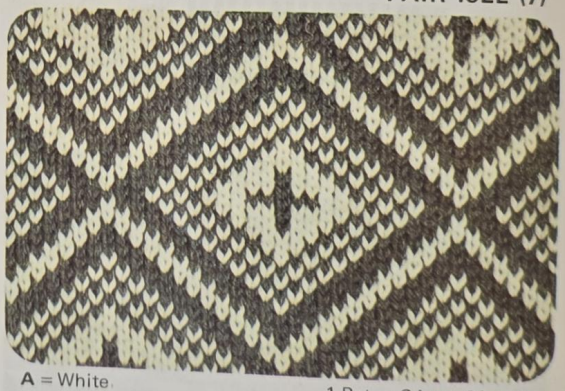


A = White
B = Light blue

1 Pat. = 24 sts, 30 rows.

CARD No.16–A

FAIR ISLE (7)

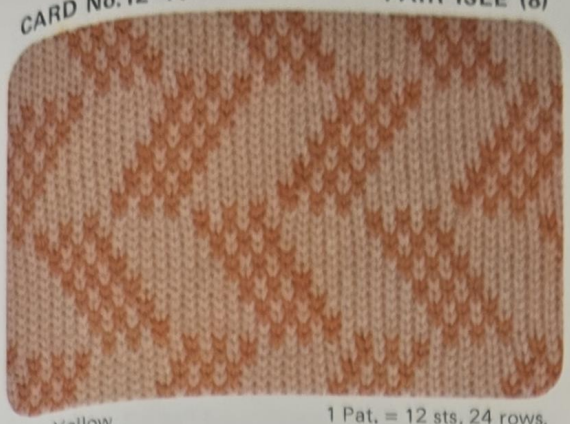


A = White
B = Green

1 Pat. = 24 sts, 30 rows.

CARD No.12–A

FAIR ISLE (8)

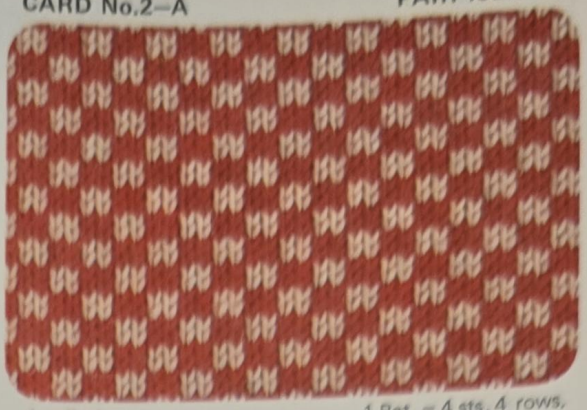


A = Yellow
B = Beige

1 Pat. = 12 sts, 24 rows.

CARD No.2–A

FAIR ISLE (9)



A = Red
B = White

1 Pat. = 4 sts, 4 rows.

CARD No.10–A

FAIR ISLE (10)

A = Cherry red
B = Grey

1 Pat. = 12 sts, 20 rows.

CARD No.18–A

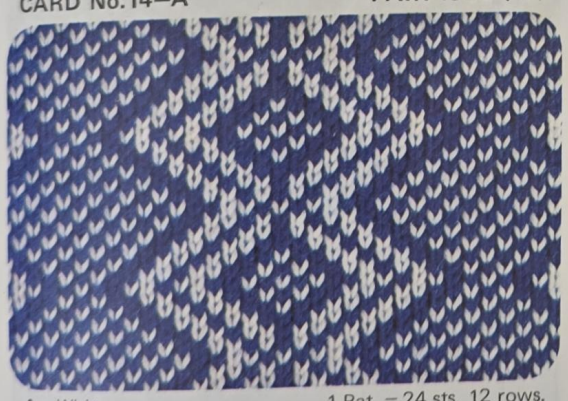
FAIR ISLE (11)

A = Brown
B = Beige

1 Pat. = 24 sts, 44 rows.

CARD No.14–A

FAIR ISLE (12)

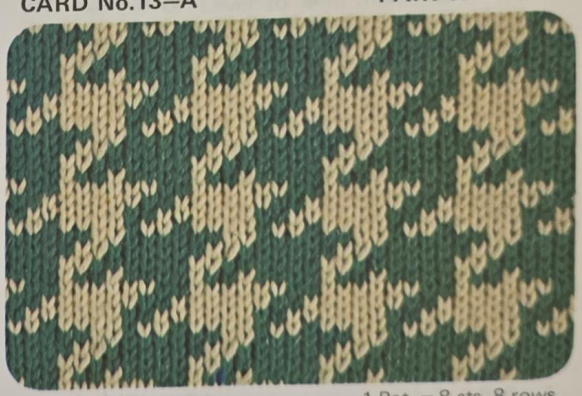


A = White
B = Blue

1 Pat. = 24 sts, 12 rows.

CARD No.13–A

FAIR ISLE (13)



A = Green
B = Beige

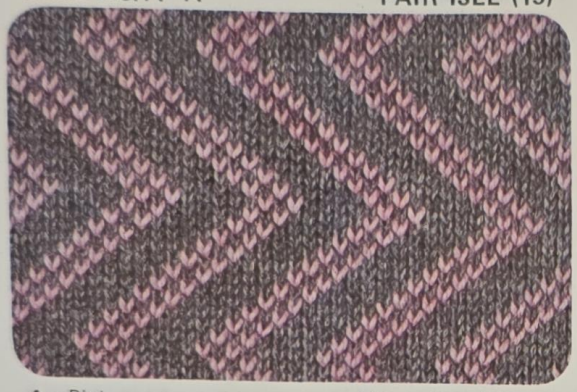
1 Pat. = 8 sts, 8 rows.

CARD No.3–A — FAIR ISLE (14)

A = Brown
B = Beige

1 Pat. = 4 sts, 8 rows.

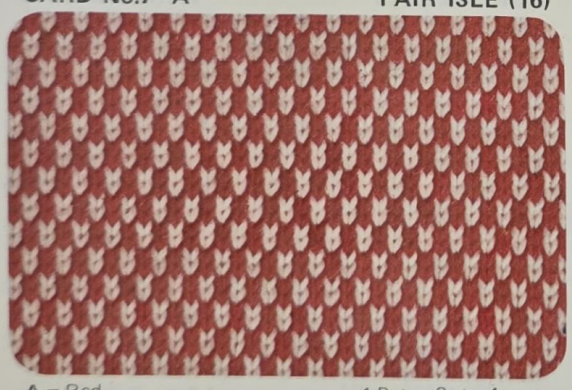
CARD No.11–A — FAIR ISLE (15)



A = Pink
B = Grey

1 Pat. = 8 sts, 24 rows.

CARD No.7–A — FAIR ISLE (16)



A = Red
B = White

1 Pat. = 2 sts, 4 rows.

CARD No.8–A — FAIR ISLE (Appli.) (1)

A = White
B = Navy blue
C = Light blue

1 Pat. = 3 sts, 18 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	I	A		STOCKINET	|	▲	●	S	→
❷	I	A	B	KNIT-IN	||	▲	▼	S	← →) 10
	10	〃	〃	〃	〃	〃	〃	〃	
	11	〃	C	〃	〃	〃	〃	〃	← →) 8
	18	〃	〃	〃	〃	〃	〃	〃	
	⬇	〃	※	〃	〃	〃	〃	〃	⇄ ※

*Knit 10 rows with colour B in the yarn feeder ② and 8 rows in colour C alternately.

CARD No.2–A — FAIR ISLE (Appli.) (2)

A = White
B = Yellow
C = Red
D = Navy blue
E = Green

1 Pat. = 4 sts, 8 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	I	A		STOCKINET	|	▲	●	S	→
❷	I	A	B	KNIT-IN	||	▲	▼	S	← →) 2
	2	〃	〃	〃	〃	〃	〃	〃	
	3	〃	C	〃	〃	〃	〃	〃	← →) 2
	4	〃	〃	〃	〃	〃	〃	〃	
	5	〃	D	〃	〃	〃	〃	〃	← →) 2
	6	〃	〃	〃	〃	〃	〃	〃	
	7	〃	E	〃	〃	〃	〃	〃	← →) 2
	8	〃	〃	〃	〃	〃	〃	〃	
	⬇	〃	※	〃	〃	〃	〃	〃	⇄ ※

*Change the four colours every 2 rows in the yarn feeder ②.

MAGIC POINT (MOTIF)

CARD No.19–03–A **MAGIC POINT (1)**

A = White
B = Blue
C = Black
1 Pat. = 24 sts, 56 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO.RS.)
❶	1	A		STOCKINET	|	▲	●	S	⟶
❷	1	A	B	KNIT-IN	|	▲	▼	S	⟵⟶ ×17
	17	〃	〃	〃	〃	〃	〃	〃	⟵
	18	〃		〃	〃	〃	〃	〃	⟶
	19	〃		〃	〃	〃	〃	〃	⟵
❸	20	〃	C	〃	〃	〃	〃	〃	⟶⟵ ×37
	56	〃	〃	〃	〃	〃	〃	〃	⟶

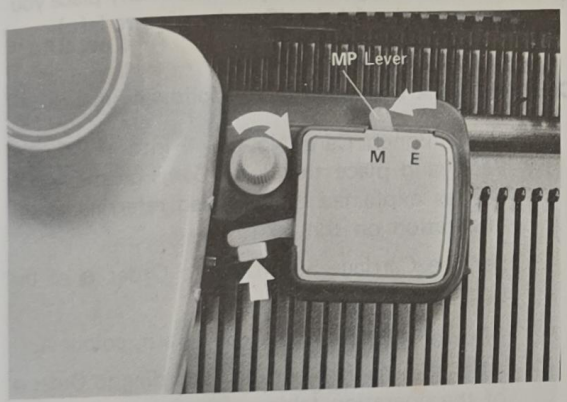
* A single pattern in Knit-in (Fair Isle) stitch can be knit in any position, width and length desired.

* Prepare the following accessories:—

Magic Cam	Right & Left
Separator	2 pcs.
Point Cam M	Right & Left (2 pcs.)
Claw Weights	2 pcs.

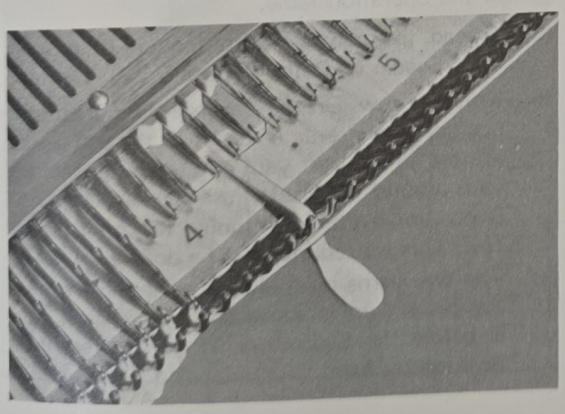
Note: * The Carriage setting is the same as that for Knit-in but the Russel Levers should be set in the **I** position.

* The Magic Point can be also knit in Punch Lace with the Carriage setting exactly the same as that for ordinary Punch Lace. When knitting in this stitch the Separators are not required.



* Install the Magic Cams on both sides of the Carriage. To do this, set the Side Levers to the ● mark and insert the Magic Cams as illustrated, so that the ▲ marks on both sides of the Carriage and those on the Magic Cams meet at the same position. Fasten the Cams firmly with the screw caps and release the Side Levers from the ● position so that they hit the Magic Cams.

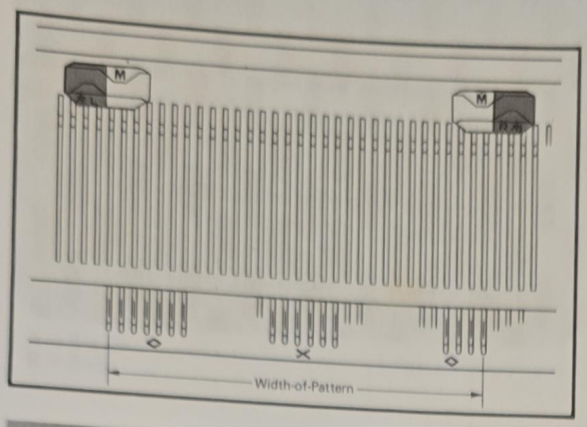
* Set the MP Lever to ● M mark.
(The Lever should slightly be raised upwards, before setting it.)

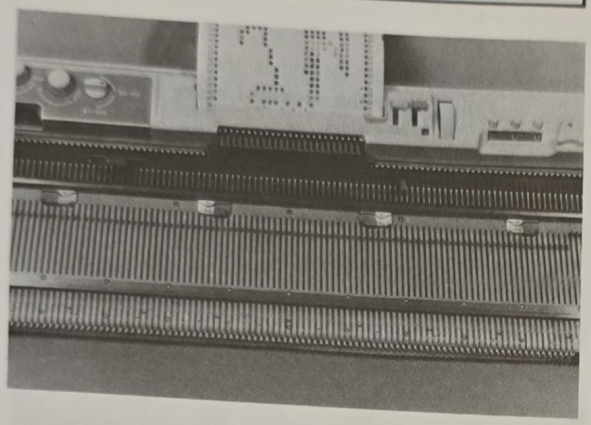


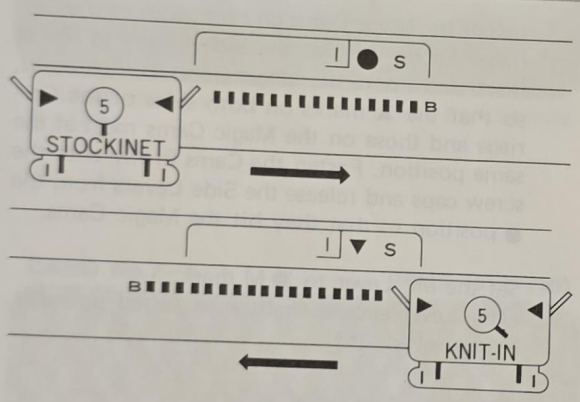
* Open the latches of the 3 non-working needles on both sides of the fabric and install the separator under the fourth non-working needles on both sides.

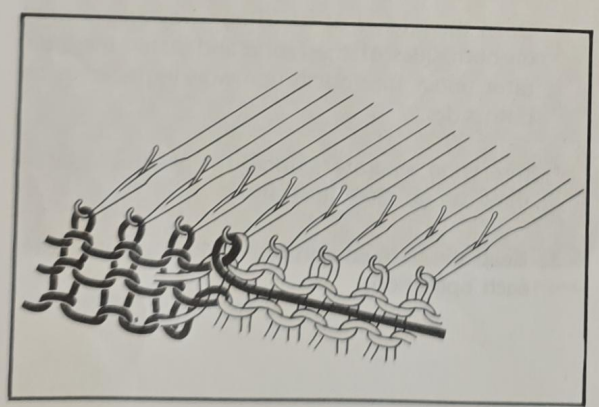
* Insert the separators under the needles as far as they can go. See illustration.

* Keep the yarn end on top of the separator after each operation.









* Select two neighbouring ◇ marks between which you would like the Magic Point (or Motif) to be knit.

Note:* This Penguin pattern is begun by knitting the base of the motif (Fairisle) wider than 24 stitches; it is knitted across 31 stitches.

* The left Point cam should be placed four needles to the outside of the left ◇ mark and the right Point Cam three needles to the outside of the right ◇ mark, with the letter M on both Point Cams covering the width for knitting the pattern.

Note:* The Point Cams are coloured in Orange and White. Be sure to set the Point Cams so that the white covers the pattern and the Orange faces to the outside.

* After placing the Point Cams on the needle bed, they must be pushed away from you as far as they go, as shown in the diagram.

* By replacing one set of the Point Cams, you can work a wider pattern or make a variation on a Punch Card design.

* By using two sets of the Point Cams, you can work the Magic Point patterns in any place you want on the fabric. (See the picture left.)

Card No.19—A is knitted in the following manner:—

(1) Insert Punch Card No.19—A into the Centre Panel and place the Point Cams on the needle bed as explained above (also referring to the illustration on the left).

(2) Set the Carriage according to Order ❶ of the operation table.

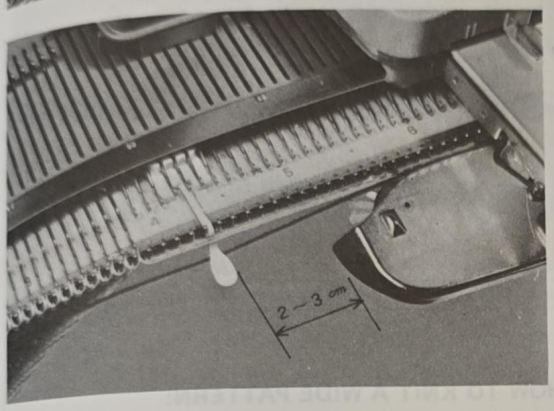
(3) Knit one row with the main yarn, colour A.

(4) Alter the Carriage setting according to Order ❷ of the operation table.

(5) Thread the contrast yarn (colour B) through Yarn Feeder ② Refer to page 57.

(6) Knit one row. On the Carriage side, bring to C position the needle adjacent to the end needle knitted in contrast yarn and wrap the contrast yarn around the hook. Push the needle back to B position before continuing to knit the next row. This procedure must be done every row.

* The two yarns must always be arranged so that the main yarn is above and the contrast yarn is below the Separators. If not, correct their position by hand.



(7) From the second row, move the Carriage in the arrowed direction (see operation table) while pulling down the contrast yarn, with your hand, directly below the Separators as illustrated. When the Carriage is moved and the first round brush has passed under the Separator, release the contrast yarn and continue to knit the row.

(8) Continue to knit by repeating procedures (6) and (7) for each row.

(9) For the 18th and 19th rows, remove the contrast yarn from Yarn Feeder ②.

(10) Before knitting the 20th row, the Point Cams must be placed inside the ◇ marks bringing the pattern to a standard width of 24 stitches, in order to knit a complete penguin. Afterwards, thread a second contrast yarn (colour C) through Yarn Feeder ② as indicated in Order ❸ of the operation table. Knit following procedure (8).

* If you mis-knit in the middle of a row, before moving the Carriage, the Magic Cams must be removed from the needle bed.
* When the Carriage is moved back and forth, it should be moved until it is at least 2—3 cms. off the Separators.
* After completing the Magic Point pattern and before starting to knit in Stockinet, remove the Magic Cams from the Carriage, and the Separators and Point Cams from the needle bed.

Note: It is recommended to knit patterns within 150 needles at the centre of the needle bed. If the position of the pattern is far from the centre of the needle bed or the pattern is too wide, the Auto-Tension cannot take up slack on the yarns.

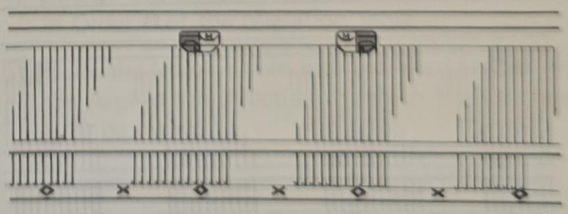
* The following patterns are knitted in the same manner:—
* The remainder of the Magic Point patterns use 24 needle pattern width. The setting of the Point Cams to two ◇ marks locating left and right of an "X" mark, make certain the proper placement of the Magic Point pattern.
* Placing the Point Cams any place other than the ◇ marks could result in partial Magic Point pattern.

CARD No.5—A **MAGIC POINT (2)**

A=Beige C=Pink
B=Green

1 Pat. = 24 sts, 58 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	→
❷	1	A	B	KNIT-IN	|	▲	▼	S	←→ 15
	15	〃	〃	〃	〃	〃	〃	〃	←→
	16	〃	C	〃	〃	〃	〃	〃	→← 33
	48	〃	〃	〃	〃	〃	〃	〃	→←
	49	〃	B	〃	〃	〃	〃	〃	←→ 10
	58	〃	〃	〃	〃	〃	〃	〃	←→



CARD No.6–03–A

A = Yellow
B = Green
C = Red
D = Dark Green
E = Grey

1 Pat. = 24 sts, 60 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	⟵
❷	1	A	B	KNIT-IN	|	▲	▼	S	⟵
	5	〃	〃	〃	〃	〃	〃	〃	⟶) 5
	6	〃	C	〃	〃	〃	〃	〃	⟵
	8	〃	〃	〃	〃	〃	〃	〃	⟶) 3
	9	〃		〃	〃	〃	〃	〃	⟵
	10	〃		〃	〃	〃	〃	〃	⟶
	11	〃	D	〃	〃	〃	〃	〃	⟵
	12	〃	〃	〃	〃	〃	〃	〃	⟶
❸	13	〃	〃	〃	〃	〃	〃	〃	⟵
	35	〃	〃	〃	〃	〃	〃	〃	⟶) 23
❹	36	〃	〃	〃	〃	〃	〃	〃	⟵
	46	〃	〃	〃	〃	〃	〃	〃	⟶) 11
	47	〃		〃	〃	〃	〃	〃	⟵
	48	〃		〃	〃	〃	〃	〃	⟶
	49	〃	E	〃	〃	〃	〃	〃	⟵
	60	〃	〃	〃	〃	〃	〃	〃	⟶) 12

HOW TO KNIT A WIDE PATTERN:

(1) In accordance with Order ❷ of the operation table, on the left, set the Cam Lever to "Knit-in" and knit without using the Magic Cams or Point Cams.

(2) From Order ❷ of the operation table onwards, use the Magic Cams and Point Cams in order to knit the Magic Point. The Point Cams must be placed on the outside of the ◇ marks covering a width of 4 ◇ marks (72 stitches). (Diagram ①)

(3) From Order ❹ of the operation table, remove the left Point Cam and place it 48 stitches to the right bringing the pattern to a width of 24 stitches to complete the train engine pattern. (Diagram ②)

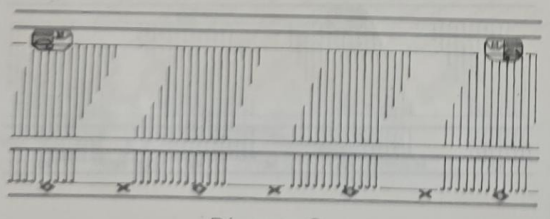


Diagram ①

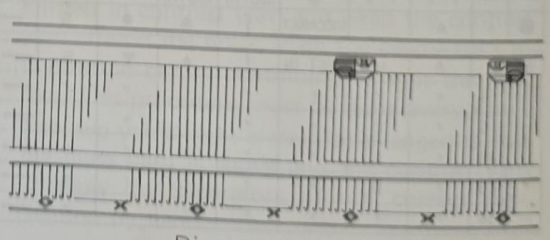
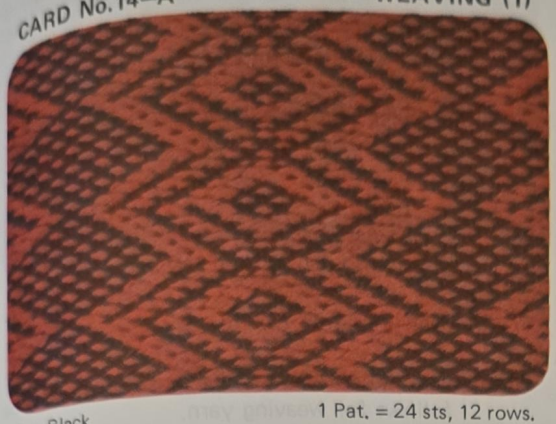


Diagram ②

WEAVING

CARD No.14–A

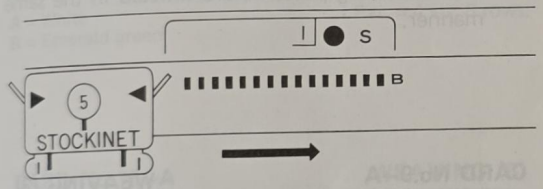
WEAVING (1)

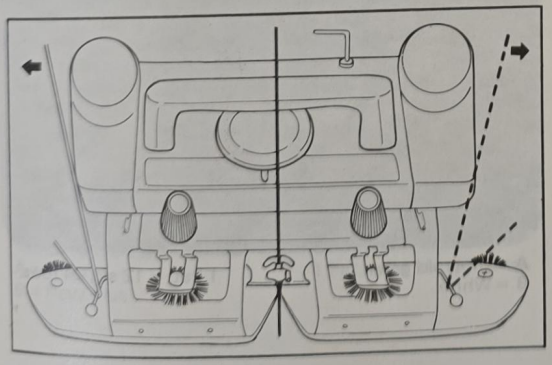


A = Black
B = Red

1 Pat. = 24 sts, 12 rows.

ORDER	CARD MEM.	YARN F. 1	YARN Y.H.	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO.RS.)
❶	1	A		STOCKINET	|	▲	●	S	→
❷	1	A	B	STOCKINET	||	▲	▼	S	←
	2	〃	〃	〃	〃	〃	〃	〃	→
	↓	〃	〃	〃	〃	〃	〃	〃	⇄ ※

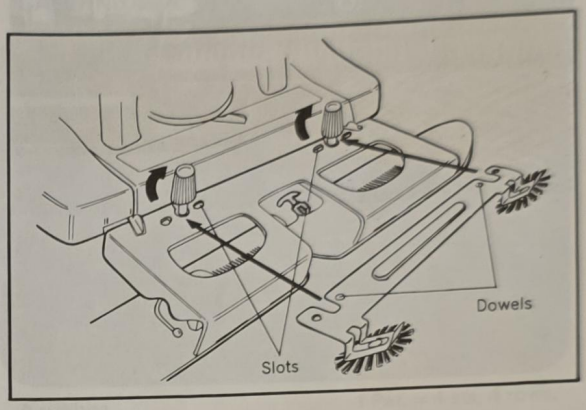




* This is the method in which a fancy yarn, or thicker or bulky yarn is knitted into the fabric bringing the pattern to the wrong side of the garment and giving it a weaving effect. In this case, a medium size yarn is used for main knitting and a thicker yarn for weaving.

* Attach the accessory Weights to both ends of the knitted fabric.

* Install the Weaving Arm. Loosen the Arm Nuts and place the Weaving Arm on top of the Carriage Arm. Be sure to fit the dowels of the Weaving Arm into the slots of the Carriage Arm and then tighten the Arm Nuts.



(1) Insert Punch Card No.14–A.

(2) Thread the knitting yarn (colour A) through the Yarn Feeder ①.

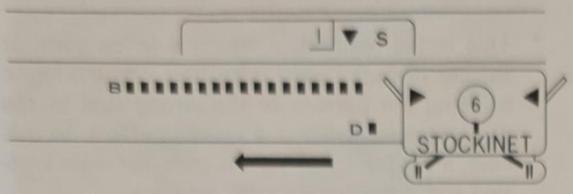
(3) Set the carriage following the instructions given in Order ❶ of the operation table and knit one row.

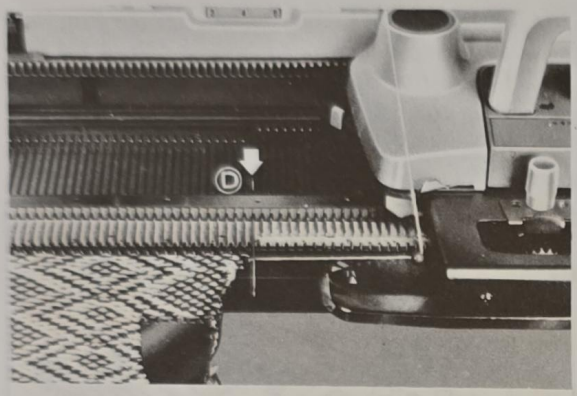
* The Stitch Dial should be loosened by one number than that used for Stockinet at this point.

* Thread the weaving yarn through the Auto-Tension.

(4) Change the setting of the Carriage as instructed in Order ❷ of the operation table.

(5) Hook the weaving yarn into the Yarn Holder on the Arm in the direction in which the Carriage is to be moved.





(6) To prevent the knitted patterns from being shaped wrong, bring the end needle nearest the Carriage to D position and knit one row.

When the Magic Cams and the Point Cams **E** are installed, you may perform knitting without bringing an end needle on the Carriage side to D or C position. (Refer to pages 80–81)

Note:* In decreasing or increasing, move the Point Cams **E** following the stitches to be decreased or increased. In Lace knitting, rest the needles without using the Magic Cams.

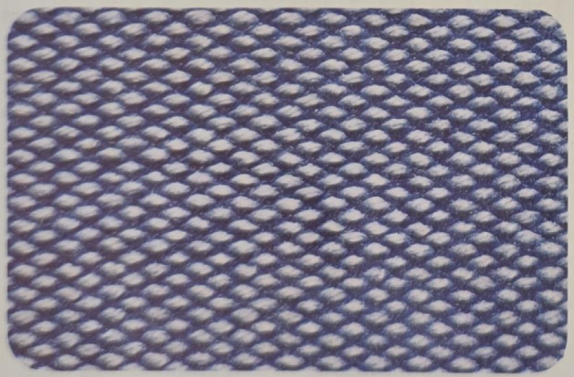
(7) Repeat operation (5) (6).

Note:* The Auto-Tension Dial must be adjusted as follows for weaving yarn.

Medium yarn (Ordinary 4 ply) Thick yarn	2–3

* The following patterns are knitted in the same manner.

CARD No.1–A **WEAVING (2)**



A = Blue
B = White

1 Pat. = 2 sts, 2 rows.

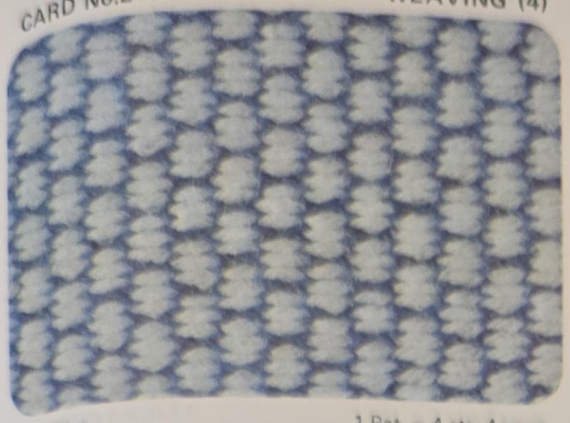
CARD No.9–A **WEAVING (3)**

A = Emerald green
B = White

1 Pat. = 12 sts, 24 rows.

CARD No.2–A

WEAVING (4)

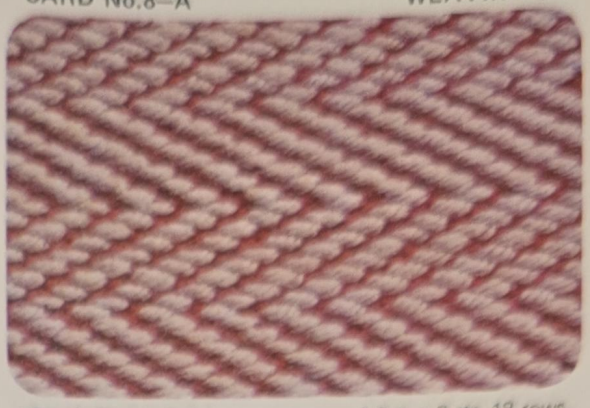


A = Blue
B = White

1 Pat. = 4 sts, 4 rows.

CARD No.8–A

WEAVING (5)



A = Red
B = White

1 Pat. = 3 sts, 18 rows.

CARD No.3–A

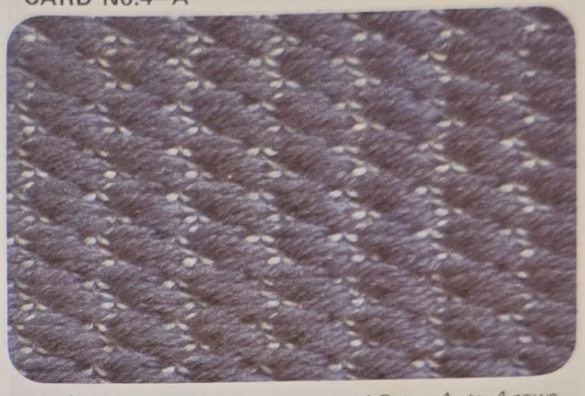
WEAVING (6)

A = White
B = Emerald green

1 Pat. = 4 sts, 8 rows.

CARD No.4–A

WEAVING (7)

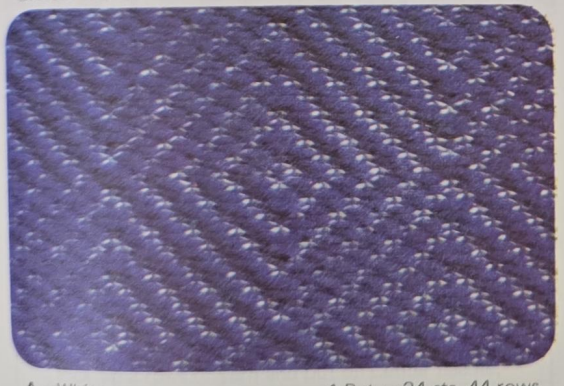


A = White
B = Grey

1 Pat. = 4 sts, 4 rows.

CARD No.18–A

WEAVING (8)



A = White
B = Navy blue

1 Pat. = 24 sts, 44 rows.

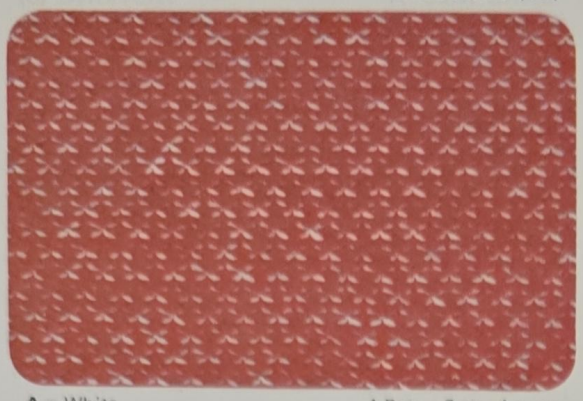
CARD No.16–A

WEAVING (9)

A = Brown
B = White

1 Pat. = 24 sts, 30 rows.

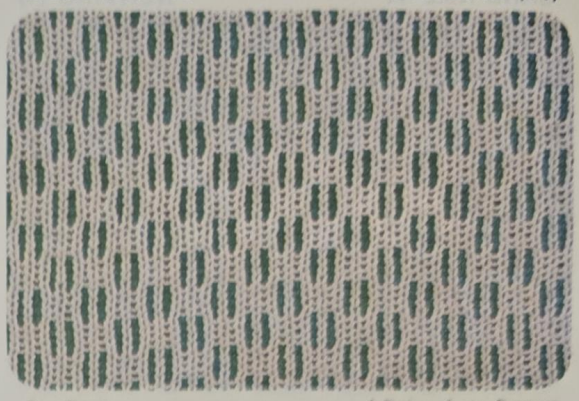
CARD No.7–A WEAVING (10)



A = White
B = Red

1 Pat. = 2 sts, 4 rows.

CARD No.3–A WEAVING (11)



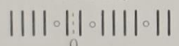
A = Grey
B = Green

1 Pat. = 4 sts, 8 rows.

CARD No.4–A WEAVING(Resting Needles) (1)

A = Blue
B = Yellow

(N. R. D.)

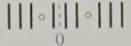


1 Pat. = 8 sts, 4 rows.

CARD No.3–A WEAVING(Resting Needles) (2)

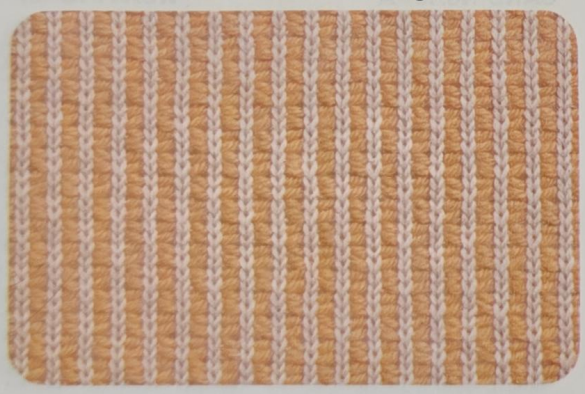
A = Yellow
B = Green

(N. R. D.)



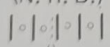
1 Pat. = 4 sts, 8 rows.

CARD No.2–A WEAVING(Resting Needles) (3)



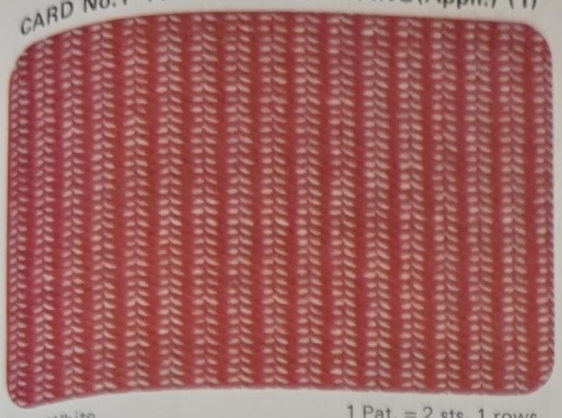
A = White
B = Yellow

(N. R. D.)



1 Pat. = 4 sts, 4 rows.

CARD No.1–A　WEAVING(Appli.) (1)



A = White
B = Cherry red

1 Pat. = 2 sts, 1 rows.

ORDER	CARD MEM.	YARN F. 1	YARN Y.H.	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	I	A		STOCKINET	I	▲	●	S	⟶
❷	I	A	B	STOCKINET	II	▲	●	S	⟵
	〃	〃	〃	〃	〃	〃	〃	〃	⟶
	〃	〃	〃	〃	〃	〃	〃	〃	⇄ ※

CARD No.2–A　WEAVING(Appli.) (2)

A = Light green
B = Green

1 Pat. = 4 sts, 1 rows.

ORDER	CARD MEM.	YARN F. 1	YARN Y.H.	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	I	A		STOCKINET	I	▲	●	S	⟶
❷	I	A	B	STOCKINET	II	▲	●	S	⟵
	〃	〃	〃	〃	〃	〃	〃	〃	⟶
	〃	〃	〃	〃	〃	〃	〃	〃	⇄ ※

CARD No.3–A　WEAVING(Appli.) (3)

A = White
B = Cherry red

1 Pat. = 4 sts, 8 rows.

ORDER	CARD MEM.	YARN F. 1	YARN Y.H.	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	I	A		STOCKINET	I	▲	●	S	⟶
❷	I	A	B	STOCKINET	II	▲	▼	S	⟵
	2	〃	〃	〃	〃	〃	〃	〃	⟶
	3	〃		〃	〃	〃	〃	〃	⟵
	Pick up 2 rows of yarn and put on Center needle.								
	4	〃		〃	〃	〃	〃	〃	⟶
	⬇	〃	※	〃	〃	〃	〃	〃	⇄ ※

CARD No.3–A　WEAVING(Appli.) (4)

A = Yellow
B = Blue

1 Pat. = 4 sts, 8 rows.

ORDER	CARD MEM.	YARN F. 1	YARN Y.H.	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	I	A		STOCKINET	I	▲	●	S	⟶
❷	I	A	B	STOCKINET	II	▲	▼	S	⟵
	2	〃	〃	〃	〃	〃	〃	〃	⟶
	3	〃		TUCK	〃	〃	〃	〃	⟵
	4	〃		〃	〃	〃	〃	〃	⟶
	⬇	〃	※	※	〃	〃	〃	〃	⇄ ※

PUNCH LACE

CARD No.15–A **PUNCH LACE (1)**

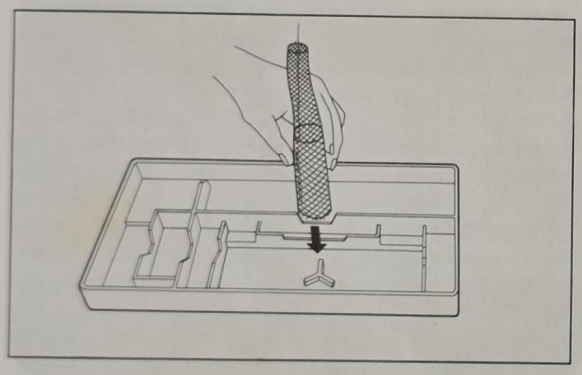
A = Cream color
B = Nylon thread

1 Pat. = 12 sts, 24 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	I	A		STOCKINET	|	▲	●	S	⟶
❷	I	A	NYLON	P. LACE	L-|-R. ||	▲	▼	S	⟵
	2	〃	〃	〃	〃	〃	〃	〃	⟶
	↓	〃	〃	〃	〃	〃	〃	〃	⇄ ※

Punch Lace is a unique feature of this machine. By using a fine transparent nylon thread together with wool or a synthetic yarn, beautiful lace garments can be created.

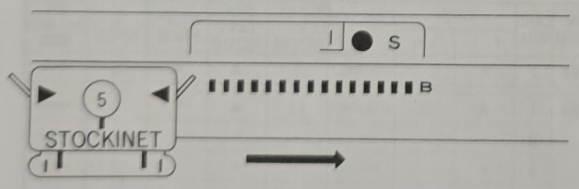
* Attach the accessory Weights to both sides of the knitted piece.



* The nylon thread and the yarn to be used should be threaded respectively through the Auto-Tension. As the nylon thread becomes easily tangled, place the Stop Net (sold separately) over the spool and attach it to the stand in the bottom of the Accessory Box, as illustrated. The nylon thread end should be placed in the Yarn Clip and the main yarn threaded through Yarn Feeder ①.

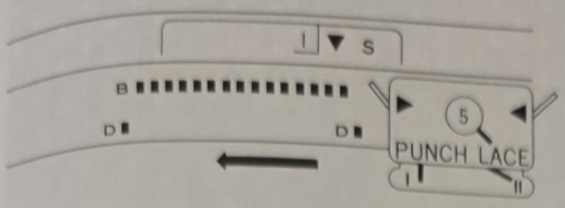
* The Auto-Tension Dial, for the nylon thread, should be placed at 5.

* DO NOT move the Carriage too fast.



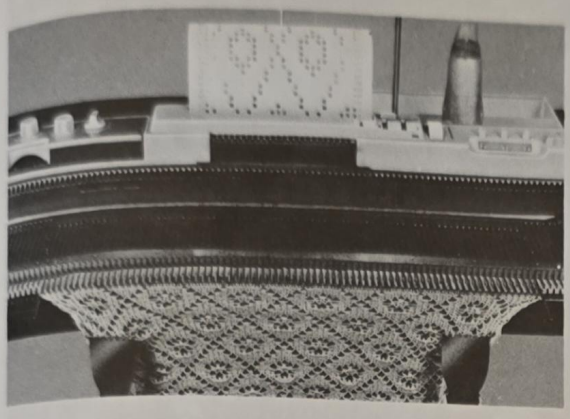
(1) Insert Punch Card No.15–A into the Centre Panel.

(2) Set the Carriage as instructed in Order ❶ of the operation table and knit one row.



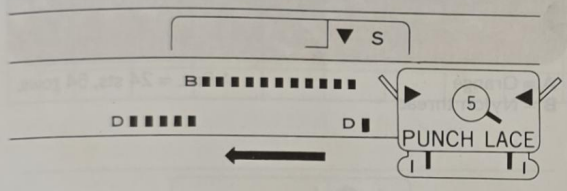
(3) Alter the setting of the Carriage according to Order ❷ of the operation table.

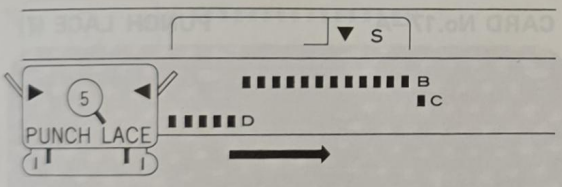
(4) The nylon thread should now be threaded through Yarn Feeder ②. (Be sure that it is threaded to the left of the Guide Pin.)



(5) Bring the end needle on both sides of the knitted fabric to D position and knit 2 rows. Continue knitting each time bringing to D position the end needle on both sides before the Carriage is moved from right to left.

Note: * If you wish to knit a certain number of rows in Stockinet between Punch Lace knitting, adjust the Cam Lever to STOCKINET and remove the nylon thread from Yarn Feeder ② before knitting.





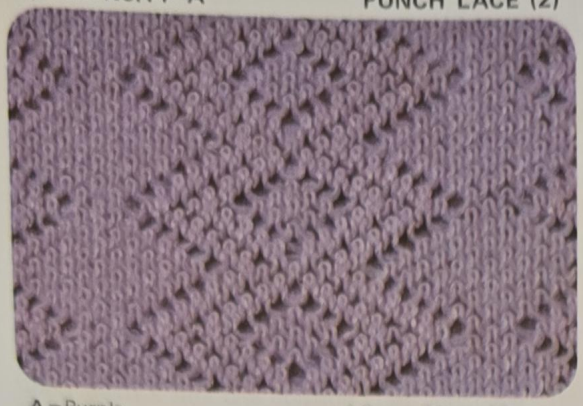
* When partial knitting, set both Russel Levers to the I position. Before moving the Carriage from right to left, bring one end needle on the side of the Carriage to D position.

When operating the Carriage from left to right, bring one end needle, as above, to C position.

* The patterns on the following page are knitted in the same manner.

CARD No.14–A

PUNCH LACE (2)

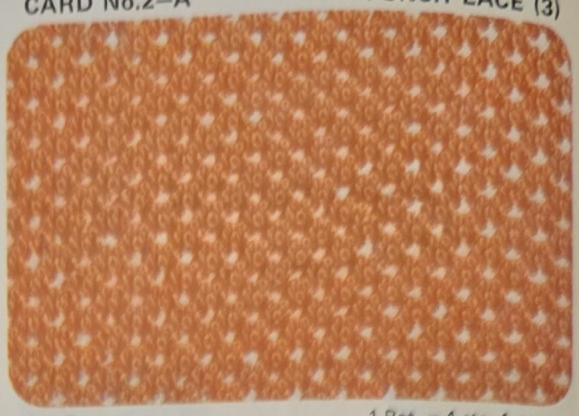


A = Purple
B = Nylon thread

1 Pat. = 24 sts, 12 rows.

CARD No.2–A

PUNCH LACE (3)

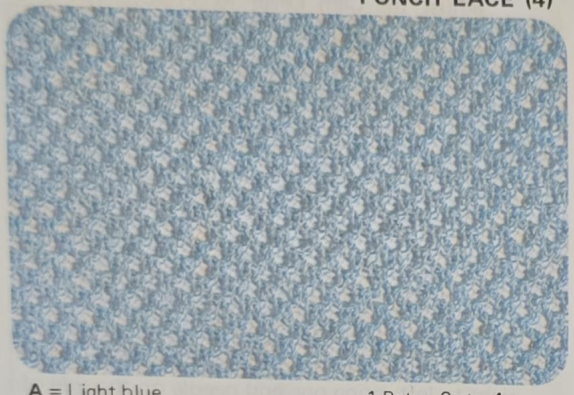


A = Orange
B = Nylon thread

1 Pat. = 4 sts, 4 rows.

CARD No.7–A

PUNCH LACE (4)



A = Light blue
B = Nylon thread

1 Pat. = 2 sts, 4 rows.

CARD No.20–A

PUNCH LACE (5)

A = Orange
B = Nylon thread

1 Pat. = 24 sts, 54 rows.

CARD No.1–A

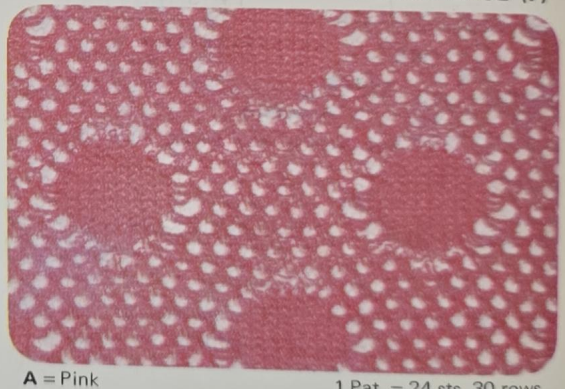
PUNCH LACE (6)

A = Yellowish green
B = Nylon thread

1 Pat. = 2 sts, 2 rows.

CARD No.17–A

PUNCH LACE (7)



A = Pink
B = Nylon thread

1 Pat. = 24 sts, 30 rows.

PATTERN KNITTING USING THE EVERY-OTHER ROW FEEDING MACHANISM

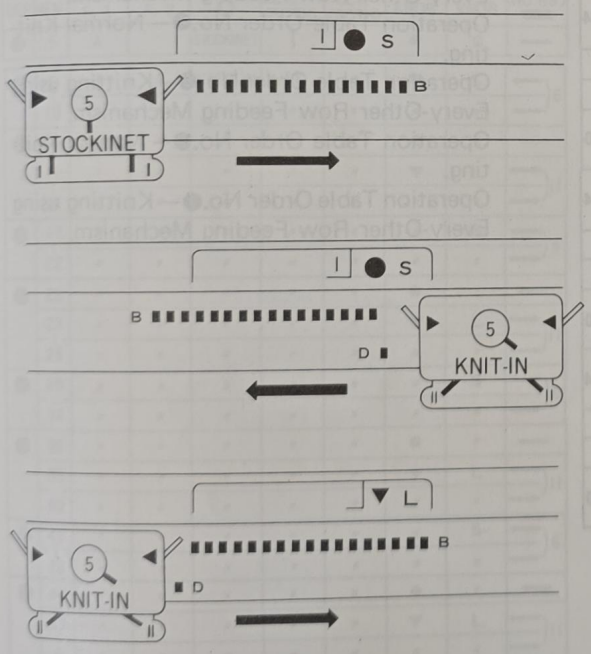
CARD No.16—A

KNIT-IN (E.O.R.) (1)

A = White
B = Red
E.O.R.....Every-Other-Row Feeding Mechanism.

1 Pat. = 24 sts, 60 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	L INDICATION	DIR. (NO.RS.)
❶	I	A		STOCKINET	I	▲	●	S		⟶
❷	I	A	B	KNIT-IN	II	▲	●	S	Blue	⟵
	I	〃	〃	〃	〃	〃	▼	L	Blue	⟶
	2	〃	〃	〃	〃	〃	〃	〃	Red	⟵
	2	〃	〃	〃	〃	〃	〃	〃	Blue	⟶
	⬇	〃	〃	〃	〃	〃	〃	〃	Red	⟷ *



* By turning the L Knob on the Centre Panel to the L mark, the Punch Card rotates every-other row therefore making the pattern twice the length of the standard sized pattern. This mechanism is mainly used for Knit-in but can be used for Slip Stitch, Weaving and Punch Lace. The

photographs above and opposite show the standard sized pattern and the pattern knitted using the Every-Other Row Feeding Mechanism.

* When knitting the longer sized pattern, the Carriage setting is the same as that for the stitch you are knitting in.

* The red colour in the L Indicator, below the L Knob indicates that the pattern for the next row has been memorized on the rear Carriage Drum Memory. The blue colour indicates that the next row will repeat the same pattern.

(1) Insert Punch Card No.16—A into the Centre Panel Unit.

(2) Set the Carriage as shown in Order No.❶ of the operation table.

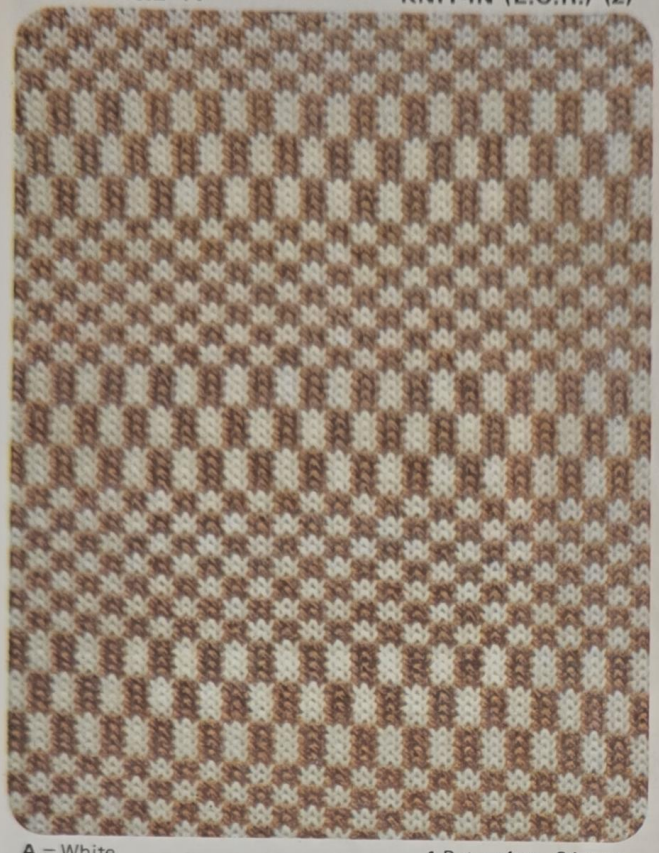
(3) Knit one row with the main yarn, colour A.

(4) Change the setting to that of line 1 of Order No.❷ in the operation table. Thread the contrast yarn, colour B, through Yarn Feeder ②and knit one row.

(5) Set both the Stop Knob and L Knob to that as shown in line 2 of Order No.❷ in the operation table. Bring to D position the end needle on the side of the Carriage and then knit the second row. (When knitted, the L Indicator turns to red.)

(6) Continue to knit in the same manner as that for Knit-in. The L Indicator changes to blue and red alternately every row.

CARD No.2–A KNIT-IN (E.O.R.) (2)



A = White
B = Ochre

1 Pat. = 4 sts, 24 rows.

Variation of the Every-Other row Feeding Mechanism.

* Care must be taken when knitting both the normal sized pattern and the pattern using the every-other row feeding mechanism on one garment. If the rows are miscalculated, in either phase of knitting, the pattern will be spoiled. Therefore, you must be careful in following the operation table below.

* If you wish to knit in other types of stitches, only the Carriage must be set according to the stitch you will be knitting in. Other settings should be made according to the operation table below.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)	
❶	1	A		STOCKINET	|	▲	●	S	→	
❷	1	A	B	KNIT-IN	||	▲	▼	S	←	14
	14	〃	〃	〃	〃	〃	〃	〃	→	
❸	15	〃	〃	〃	〃	〃	●	〃	←	
	15	〃	〃	〃	〃	〃	▼	L	→	
	16	〃	〃	〃	〃	〃	〃	〃	←	10
	20	〃	〃	〃	〃	〃	〃	〃	→	
❹	21	〃	〃	〃	〃	〃	〃	S	←	14
	34	〃	〃	〃	〃	〃	〃	〃	→	
❺	35	〃	〃	〃	〃	〃	●	〃	←	
	35	〃	〃	〃	〃	〃	▼	L	→	
	36	〃	〃	〃	〃	〃	〃	〃	←	10
	40	〃	〃	〃	〃	〃	〃	〃	→	
❻	41	〃	〃	〃	〃	〃	〃	S	←	14
	54	〃	〃	〃	〃	〃	〃	〃	→	
❼	55	〃	〃	〃	〃	〃	●	〃	←	
	55	〃	〃	〃	〃	〃	▼	L	→	
	56	〃	〃	〃	〃	〃	〃	〃	←	10
	60	〃	〃	〃	〃	〃	〃	〃	→	

Operation Table Order No.❷– Normal Knitting.
Operation Table Order No.❸– Knitting using Every-Other Row Feeding Mechanism.
Operation Table Order No.❹– Normal Knitting.
Operation Table Order No.❺– Knitting using Every-Other Row Feeding Mechanism.
Operation Table Order No.❻– Normal Knitting.
Operation Table Order No.❼– Knitting using Every-Other Row Feeding Mechanism.

CARD No.15–A

KNIT-IN (E.O.R.) (3)

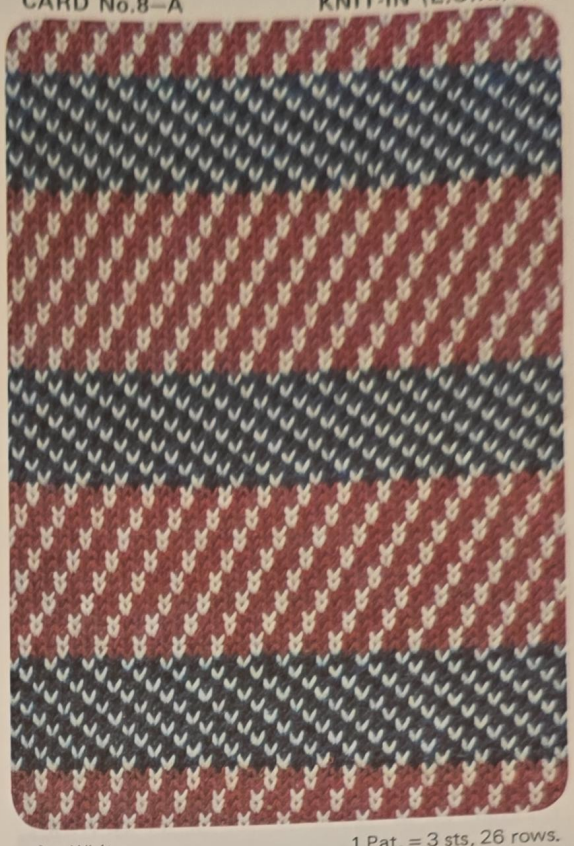
A = Blue
B = White

1 Pat. = 12 sts, 36 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	5	A		STOCKINET	I	▲	●	S	⟶
❷	5	A	B	KNIT-IN	II	▲	▼	S	⟵
	10	〃	〃	〃	〃	〃	〃	〃	⟶) 6
❸	11	〃	〃	〃	〃	〃	●	〃	⟵
	11	〃	〃	〃	〃	〃	▼	L	⟶
	16	〃	〃	〃	〃	〃	〃	〃	⟶) 11
❹	17	〃	〃	〃	〃	〃	〃	S	⟵
	22	〃	〃	〃	〃	〃	〃	〃	⟶) 6
❺	23	〃	〃	〃	〃	〃	●	〃	⟵
	23	〃	〃	〃	〃	〃	▼	L	⟶
	28	〃	〃	〃	〃	〃	〃	〃	⟶) 11
❻	29	〃	〃	〃	〃	〃	〃	S	⟵
	34	〃	〃	〃	〃	〃	〃	〃	⟶) 6
❼	35	〃	〃	〃	〃	〃	●	〃	⟵
	35	〃	〃	〃	〃	〃	▼	L	⟶
	40	〃	〃	〃	〃	〃	〃	〃	⟶) 11
❽	41	〃	〃	〃	〃	〃	〃	S	⟵
	46	〃	〃	〃	〃	〃	〃	〃	⟶) 6
❾	47	〃	〃	〃	〃	〃	●	〃	⟵
	47	〃	〃	〃	〃	〃	▼	L	⟶
	4	〃	〃	〃	〃	〃	〃	〃	⟶) 11

CARD No.8–A

KNIT-IN (E.O.R.) (4)



A = White
B = Dark Green
C = Red

1 Pat. = 3 sts, 26 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	I	▲	●	S	⟶
❷	1	A	B	KNIT-IN	II	▲	▼	S	⟵
	10	〃	〃	〃	〃	〃	〃	〃	⟶) 10
❸	11	〃	C	〃	〃	〃	●	〃	⟵
	11	〃	〃	〃	〃	〃	▼	L	⟶
	18	〃	〃	〃	〃	〃	〃	〃	⟶) 15
❹	19	〃	B	〃	〃	〃	〃	S	⟵
	28	〃	〃	〃	〃	〃	〃	〃	⟶) 10
❺	29	〃	C	〃	〃	〃	●	〃	⟵
	29	〃	〃	〃	〃	〃	▼	L	⟶
	36	〃	〃	〃	〃	〃	〃	〃	⟶) 15
❻	37	〃	B	〃	〃	〃	〃	S	⟵
	46	〃	〃	〃	〃	〃	〃	〃	⟶) 10
❼	47	〃	C	〃	〃	〃	●	〃	⟵
	47	〃	〃	〃	〃	〃	▼	L	⟶
	54	〃	〃	〃	〃	〃	〃	〃	⟶) 15

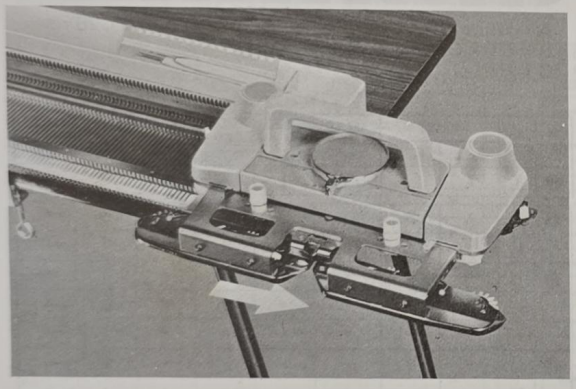
PLATTING

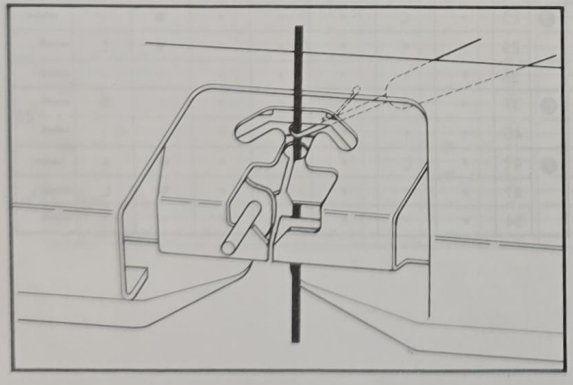
CARD No.12–A **PLATTING (1)**

A = Red
B = Yellow

1 Pat. = 12 sts, 24 rows.

ORDER	CARD MEM.	YARN F. 1	YARN P.F	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	⟶
❷	1	A	B	TUCK	|	▲	▼	S	⟵
	2	〃	〃	〃	〃	〃	〃	〃	⟶
	⬇	〃	〃	〃	〃	〃	〃	〃	⇄ ※





* Platting is knitted with two different coloured yarns. One yarn appears on one side whilst the second yarn appears on the other side of the knitted fabric.

* Platting in Stockinet is predominant but if you wish to knit this stitch in Tuck stitch patterns, you will enjoy different effects on the knitted fabric.

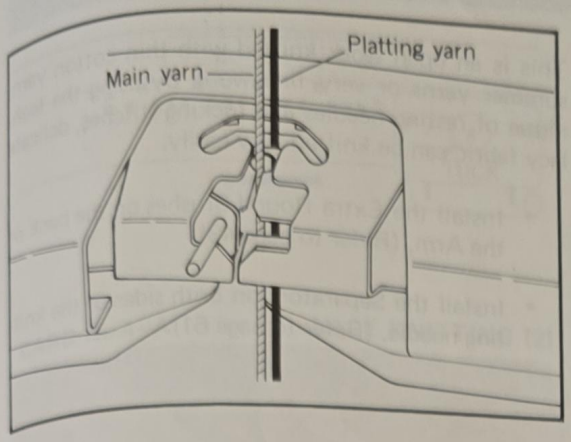
* Platting in Stockinet is easily made by threading one yarn through Yarn Feeder ① and the other yarn behind Yarn Feeder ①. After this has been done, just knit.

* Platting in Tuck stitch can be made exactly in the same way as for standard Tuck stitch patterns, the only exception being that you must thread the Platting yarn behind Yarn Feeder ①. (Refer to page 43 for knitting in Tuck stitch.)
* DO NOT fail to attach the extra Round Brushes to the Carriage Arm and the accessory Weights to both sides of the fabric. (It is not necessary to use the Separators.)
* Use a light yarn for the Platting yarn, as two yarns are used simultaneously for Platting.
  Example: Medium yarn with a thin yarn or a light yarn with a thin yarn.
  You can enjoy different effects if you use light yarns of a special material.

How to thread the Platting Yarn.

(1) Bring the Carriage to either end of the needle bed, so as the back of the Yarn Feeder can be seen.

(2) Open the Yarn Feeder Gate and thread the Platting yarn into Yarn Feeder ①. The Platting yarn must then be pulled, from the back, out of the Yarn Feeder ① with the aid of a Tappet, to behind the Yarn Feeder ① hole.



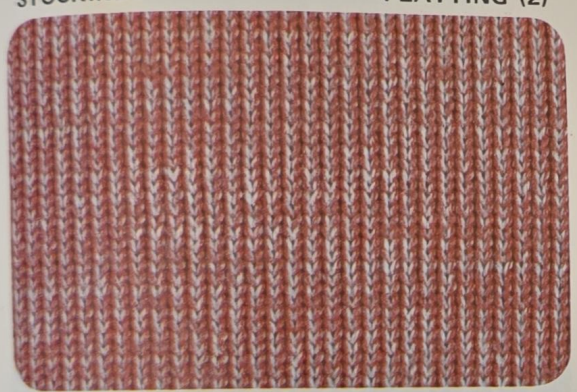
(3) After the Platting yarn has been threaded correctly, as shown in the diagram, thread the main yarn through Yarn Feeder ①. Close the Yarn Feeder Gate and start knitting.

Each yarn appears as follows:—
Platting Yarn.....on the purl side
Main Yarn.....on the knit side

(If you prefer to use the knit side, the Platting yarn must be threaded through Yarn Feeder ① and the main yarn should be behind the Yarn Feeder ① hole.)

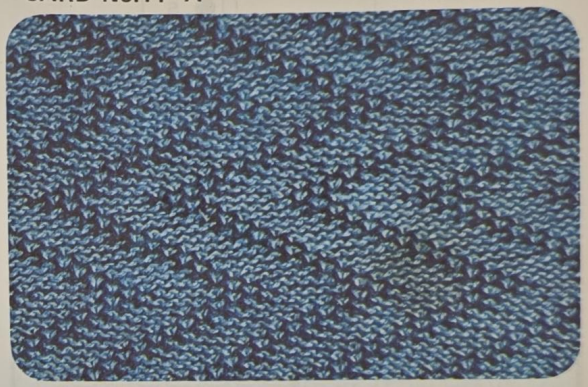
* The following stitch patterns are knitted in the same manner. (See photographs below.)

STOCKINET **PLATTING (2)**



A = Salmon Pink
B = Grey

CARD No.11–A **PLATTING (3)**

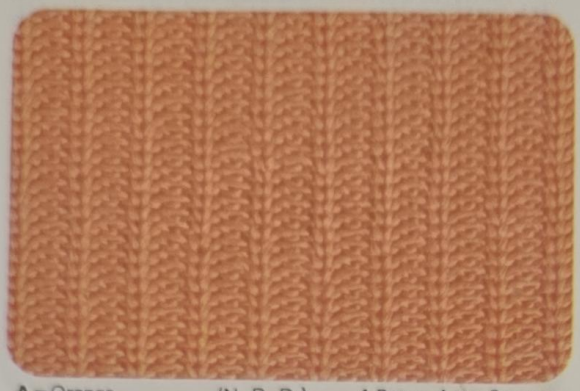


A = Navy Blue
B = Light Blue

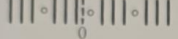
1 Pat. = 8 sts, 24 rows.

LACE KNITTING

CARD No.1–A **LACE KNITTING (1)**



A = Orange (N. R. D.) 1 Pat. = 4 sts, 2 rows.



ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	1	A		STOCKINET	|	▲	●	S	⟶
❷	1	A		TUCK	|	▲	▼	S	⟵
	2	〃		〃	〃	〃	〃	〃	⟶
	↓	〃		〃	〃	〃	〃	〃	⟹ ※

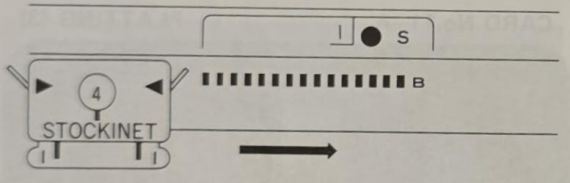
This is an open work knitted with thin cotton yarn, summer yarns or very fine wool. By using the technique of resting needles and tucking stitches, delicate lacy fabric can be knitted very easily.

* Install the Extra Round Brushes on the back of the Arm. (Refer to page 43)

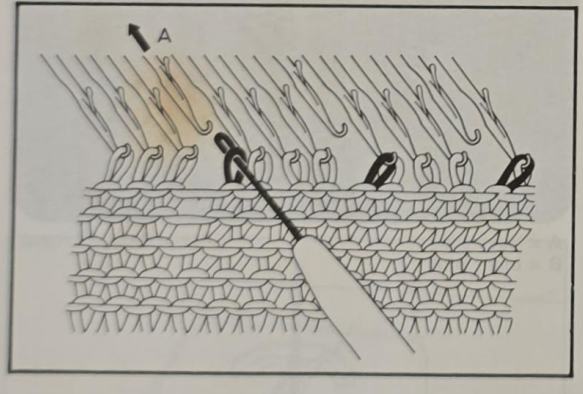
* Install the Separators on both sides of the knitting needle. (Refer to page 61)

(1) Insert Punch Card No.1–A in the Centre Panel.

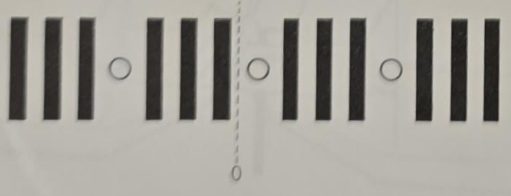
(2) Thread the yarn through the Yarn Feeder ①.



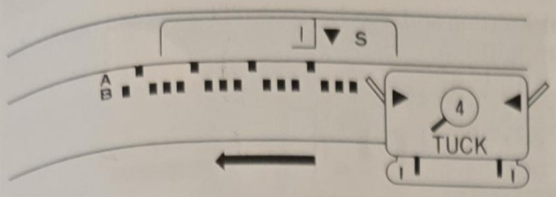
(3) Set the Carriage as instructed in Order ❶ of the operation table and knit one row.



(4) Arrange the needles as shown in the operation table (N.R.D.). With the (0) mark at the centre, transfer stitches on the needles at the ○ marks to their adjacent needles as in the diagram. Push the vacant needles to A position.



* You may also start knitting with the needles at the ○ mark being brought to A position.



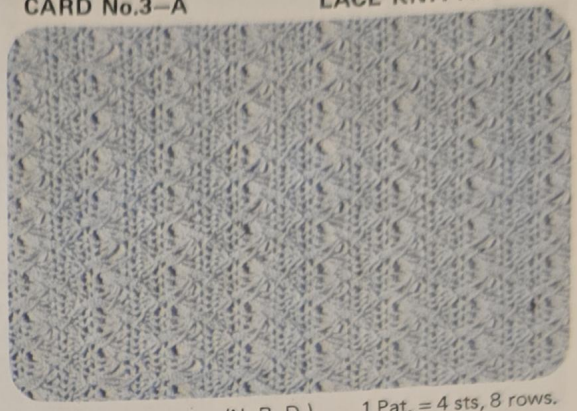
(5) After needle arrangement is completed, pattern knitting can begin. Change the setting of the carriage as instructed in Order ❷ of the operation table and continue knitting.

* The patterns on the next page are knitted in the same manner.

CARD No.4–A LACE KNITTING (2)

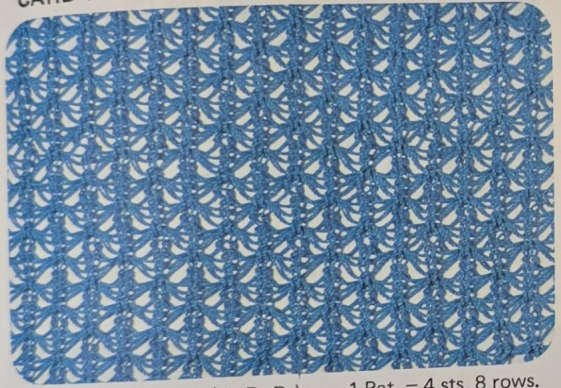
A = Yellow (N. R. D.) 1 Pat. = 4 sts, 4 rows.

CARD No.3–A LACE KNITTING (3)



A = Blue (N. R. D.) 1 Pat. = 4 sts, 8 rows.

CARD No.3–A LACE KNITTING(Appli.) (1)



A = Blue (N. R. D.) 1 Pat. = 4 sts, 8 rows.

ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	I	A		STOCKINET	I	▲	●	S	→
❷	I	A		TUCK	I	▲	▼	S	⇄ 1) 3
	1								
	3	〃		〃	〃	〃	〃	〃	→
	4	〃		STOCKINET	〃	〃	〃	〃	⇄) ※
	↓	〃		※	〃	〃	〃	〃	

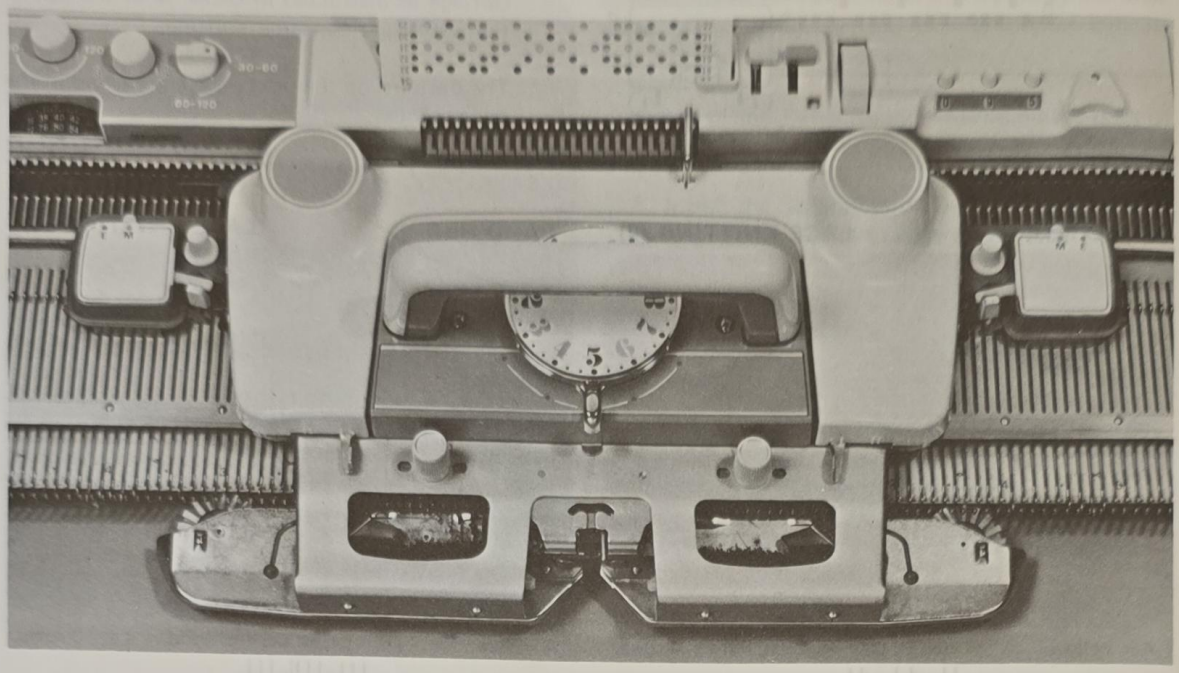
CARD No.2–A LACE KNITTING(Appli.) (2)

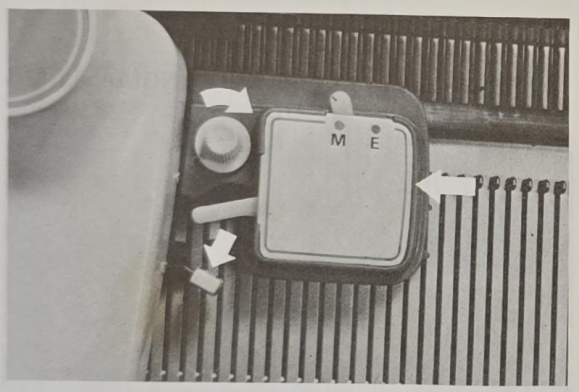
A = Light blue (N. R. D.) 1 Pat. = 4 sts, 4 rows.

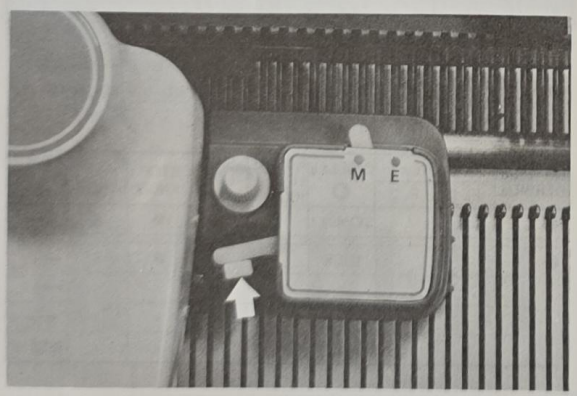
ORDER	CARD MEM.	YARN F. 1	YARN F. 2	CAM LEV.	RUSSEL LEV. (BOTH)	SIDE LEV. (BOTH)	STOP KNOB	L KNOB	DIR. (NO. RS.)
❶	I	A		STOCKINET	I	▲	●	S	→
❷	I	A		TUCK	I	▲	●	S	⇄ 1) 3
	〃	〃		〃	〃	〃	〃	〃	
	〃	〃		STOCKINET	〃	〃	〃	〃	→
	〃	〃		※	〃	〃	〃	〃	⇄) ※

HOW TO USE THE NEW MAGIC CAMS

The New Magic Cams are used for working Magic Point knitting and also for controlling the end needles for the end stitches in Knit-in (Fair Isle) or Weaving pattern knitting.





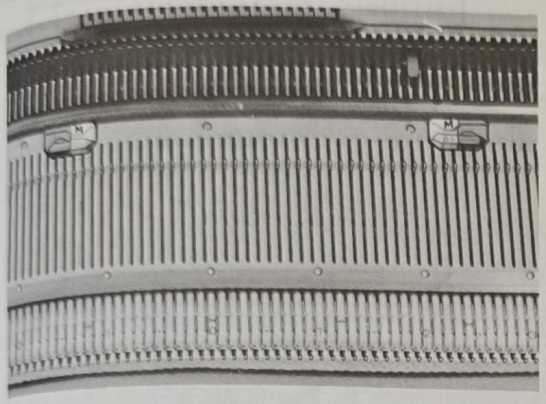


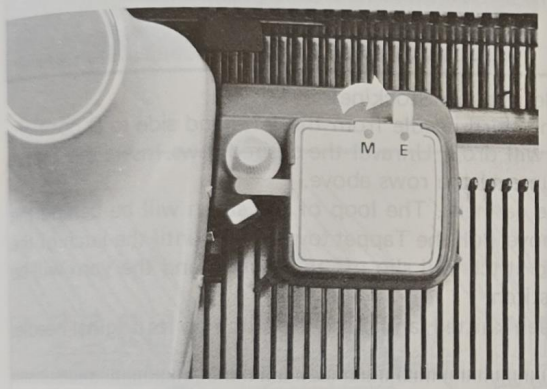
Installing the New Magic Cams

(1) Push the Side Levers of the Carriage to the ● position.

(2) Place the Magic Cams on both sides of the Carriage so that the ▲ marks on both sides of the Carriage and those on the Magic Cams meet at the same position. Fasten the Cams firmly with the Screw Caps.

(3) Release the Side Levers to the ▲ marks.





*In Case of Magic Point Knitting *

*** Using the New Magic Cams with the Point Cams M ***

(1) Set the MP Lever of the Magic Cams to the ●M mark. (When you move the Lever, lift it slightly and then move it to the M position.)

(2) Set the 2 Point Cams M on the needle bed so that the letter M on the Point Cams cover the required width for knitting a Magic Point. (The pattern width is covered up to the White portion of the Point Cams. Refer to page 62.)

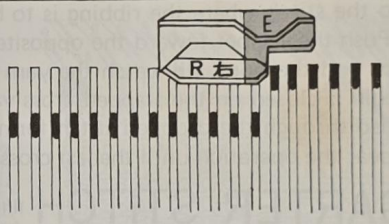
*In Case of Knit-in and Weaving *

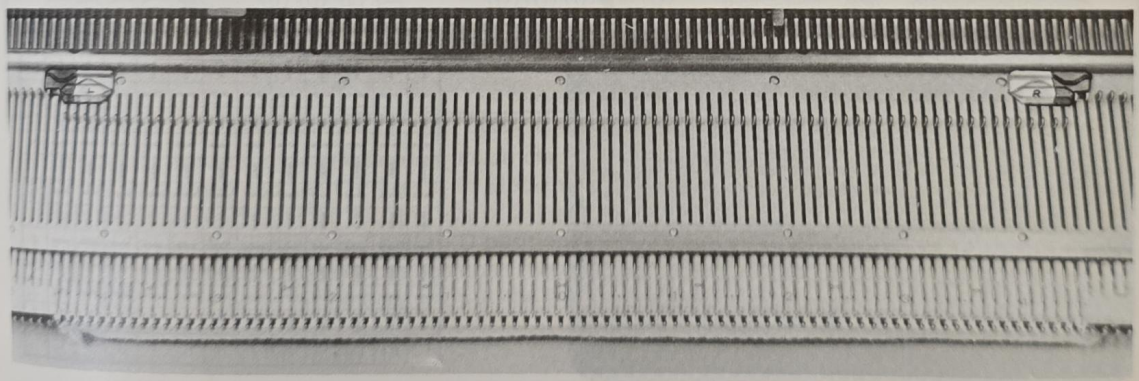
* The Magic Cams push the end working needles to D or C position in combination with the use of the Point Cams **E**.

(1) Set the MP Lever of the Magic Cams to the ●E mark.

(2) Place the Point Cams on the needle bed so that the division line between the White and Blue portion is between the second to last and last needle of the needles in B position, as illustrated.

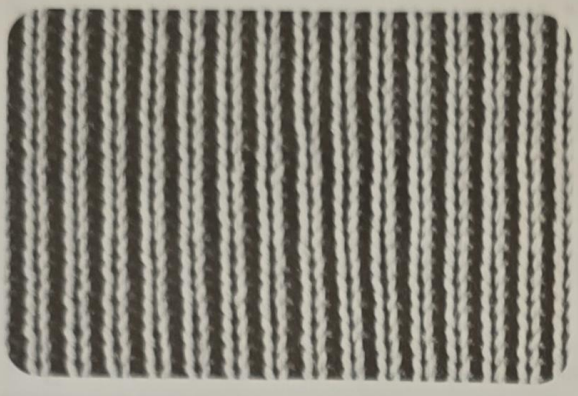
Note* In decreasing or increasing, move the Point Cam E following the stitches to be increased or decreased.

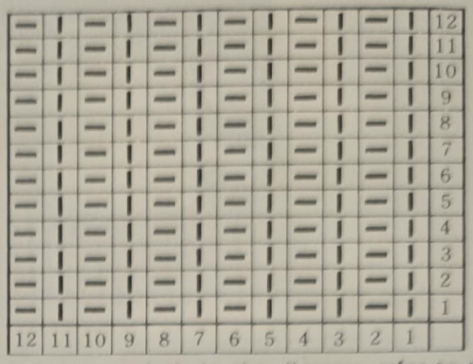




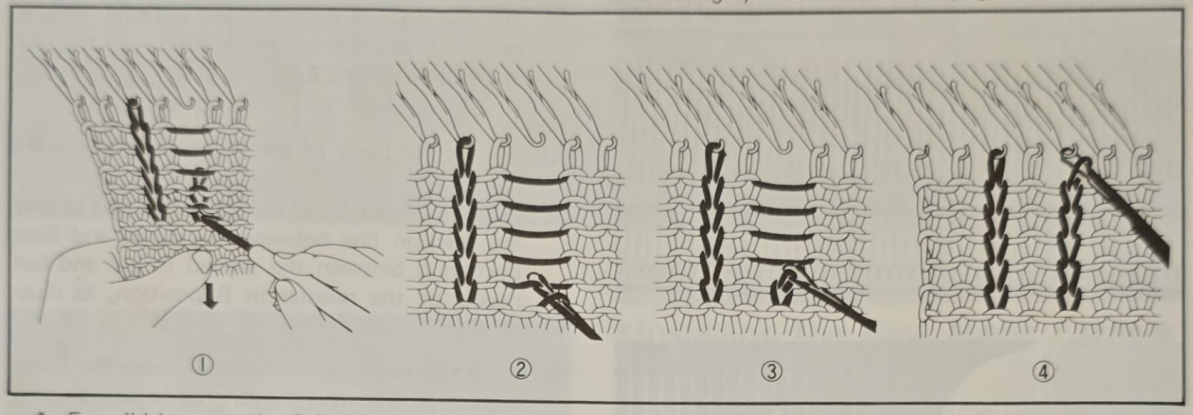
PATTERN STITCHES WITHOUT USING PUNCH CARD

1. K1. P1. RIBBING





* For knitting symbols in the diagram refer to the knitting symbols on the last page.



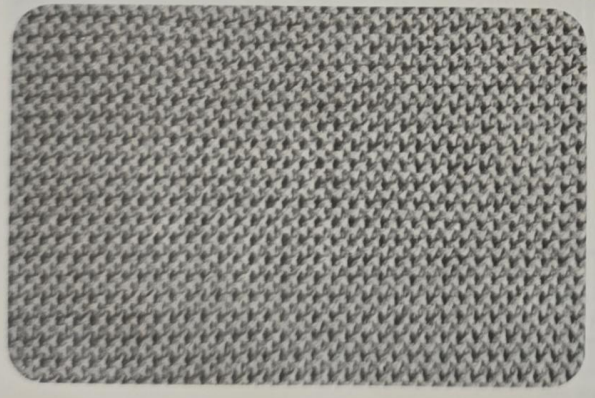
* For ribbing, use the Stitch Dial one number smaller than in Stockinet.

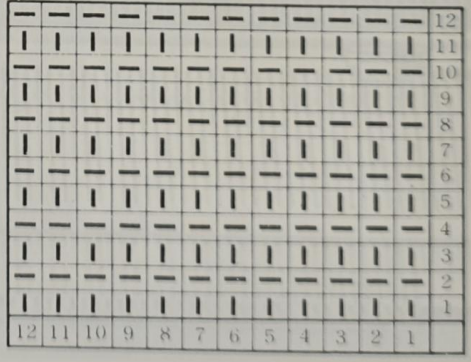
(1) Knit 7 to 8 rows for ribbing in Stockinet. Bring the third needle from the left-hand side to D position. Then by pushing it back to B position, the stitch will drop. Unravel the desired rows. Insert the Tappet into the stitch where the ribbing is to begin and unravel the rows above.

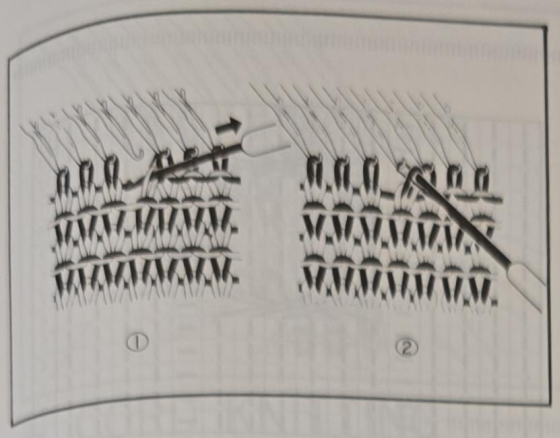
(2) (3) Push the Tappet toward the opposite side of the garment. The loop of the stitch will be behind the latch and the hook will catch the yarn crossing above. Pull the Tappet toward you until the latch of the needle is closed on the trapped cross yarn. The old stitch will slip off the tappet, and the yarn will be pulled through the dropped stitch forming a new stitch.

(4) Repeat the operation until the last cross yarn has been knitted, and place the stitch on its original needle.

2. GARTER STITCH







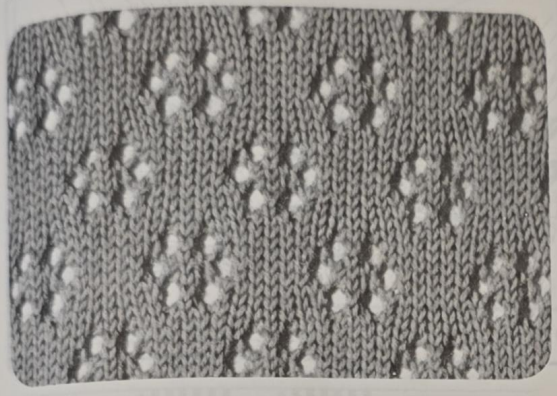
* Set the Stitch Dial to one number lower than that used for Stockinet.

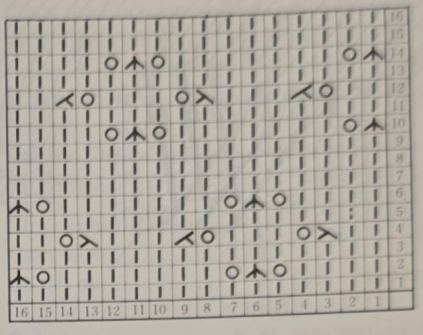
(1) Knit 2 rows.
(2) Open the latches of all needles and purl all the stitches on the last row using a Tappet.

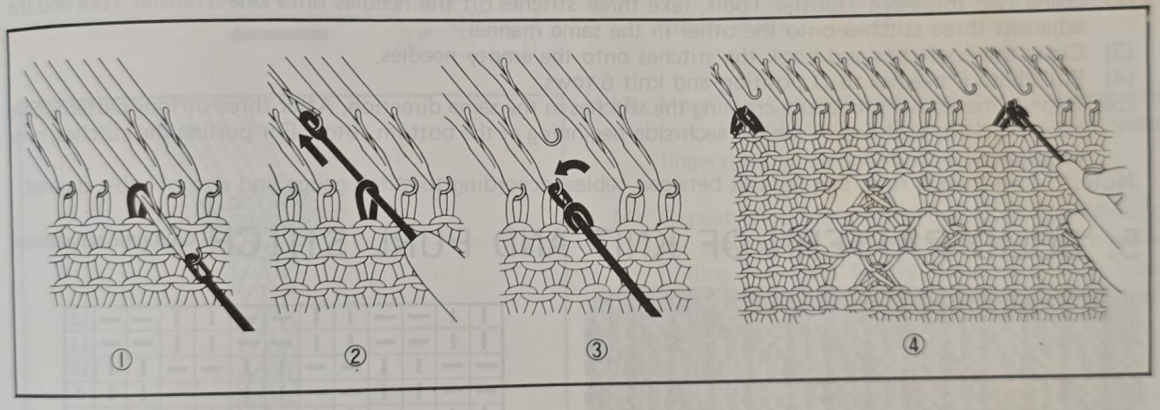
* Repeat operation (2) and (3).

Note:* The Garter Stitch is often avoided because of the time consumed in hand purling. The "Garter Bar" Transfer Tool makes this process easy and quick. It can also be used for multiple transferring and for many designs.

3. OPEN WORK

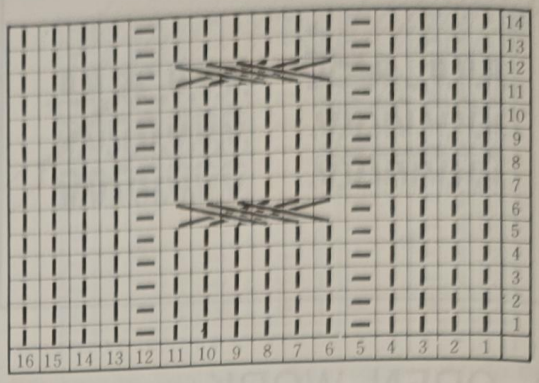


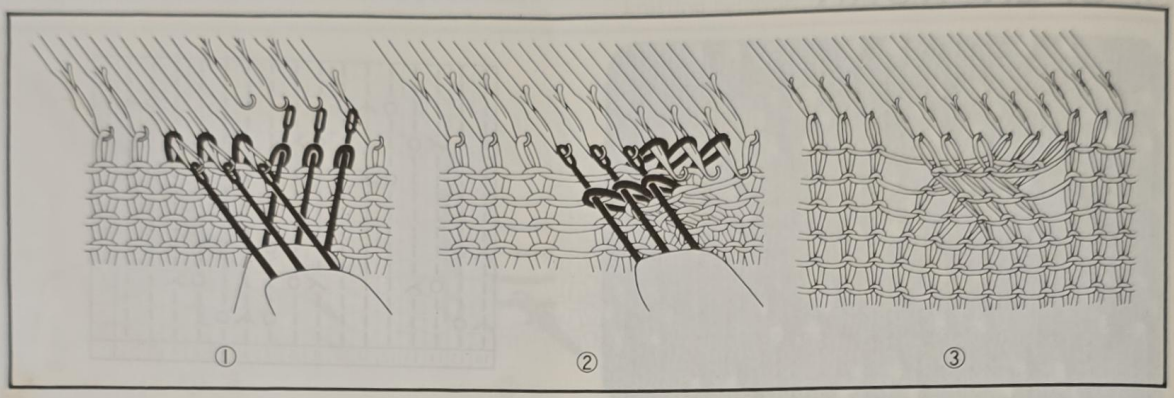




* This pattern is worked by transferring the stitches using a Transfer Tool.
* Set the Stop Knob and the Carriage as in Stockinet knitting.
(1) Knit two rows in Stockinet. Put the eye of a Transfer Tool in the hook of the needle in the position marked (○) in the diagram and pull to D position.
(2) Push the needle back to its previous position. The stitch will be transferred onto the Transfer Tool.
(3) Following the symbols in the diagram, put the eye of the Transfer Tool onto the adjacent needle and transfer the stitch.
(4) Repeat operations (1) through (3).

4. CABLE STITCH





* Set the Russel levers to **II** position.

(1) Knit 6 rows in Stockinet.

(2) Using two three-eye Transfer Tools, take three stitches off the needles onto one Transfer Tool and the adjacent three stitches onto the other in the same manner.

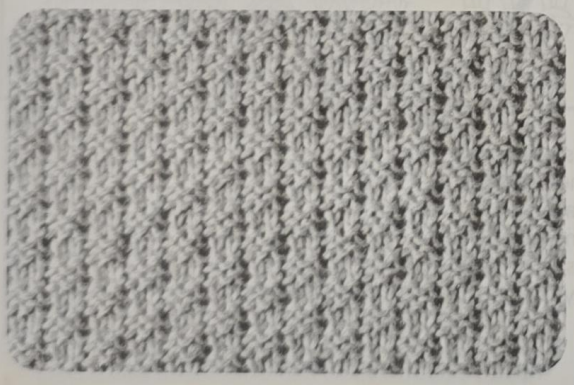
(3) Cross these stitches and hook the stitches onto the empty needles.

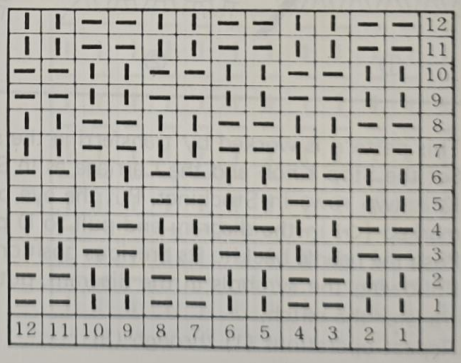
(4) Pull these 6 needles to D position and knit 6 rows.

(5) Repeat the above procedure crossing the stitches in the same direction. After three or four patterns have been worked, purl one stitch on each side beginning at the bottom stitch. For purling the stitches, refer to page 80.

Note: * More than 6 rows can be knit between cables, according to stitch gauge and size of cable desired.

5. SOLID PATTERN OF KNIT AND PURL STITCH



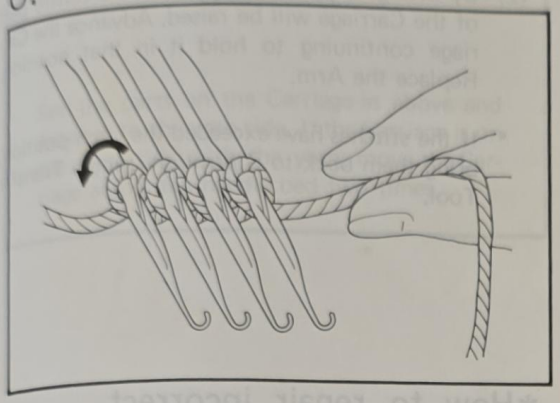


(1) Knit two rows in Stockinet.

(2) Referring to the knitting symbols of the diagram, drop the stitch marked with (—) and purl them with a Tappet every two rows.

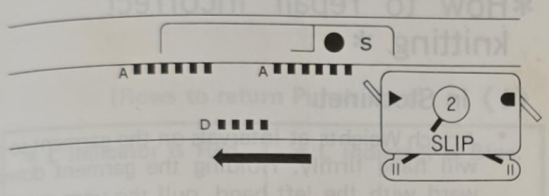
(3) Repeat the procedure (1) and (2).

6. CORD KNITTING



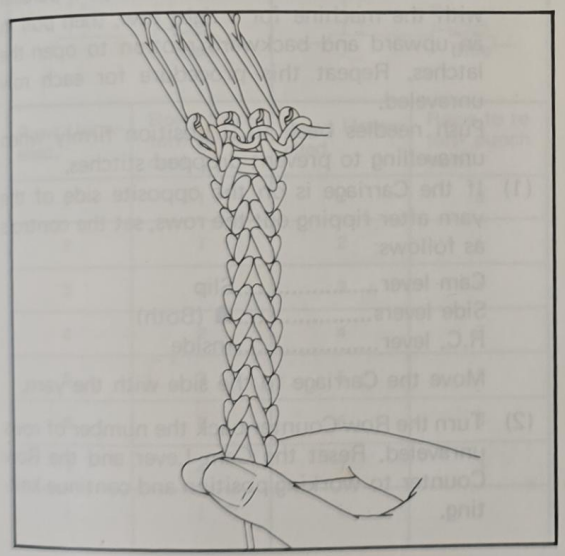
* Knitted cords are often used for bands capes hoods, etc.

(1) Place the Carriage on the right side of the needle bed. Depending upon the thickness of the cord, bring 3–5 needles to D position. Cast on the stitches by the wrapping method as illustrated.



(2) Set the Stop Knob and the parts on the Carriage as follows.

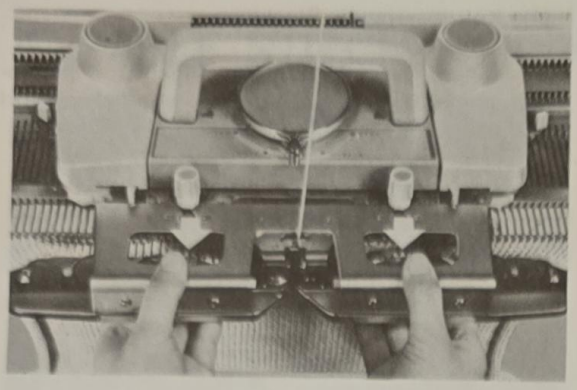
Stop knob..... ●
Cam lever..... Slip
Stitch dial..... 1–2 (for medium thick yarn)
Side lever..... ▲ at proceeding direction of the Carriage.
Side lever..... ▲ at rear direction of Carriage.
Russel levers..... II



(3) Move the Carriage back and forth knitting one row. Holding the knitted stitches with your fingers, bring the needles to D position.

(4) Repeat (3) a few more times. Continue knitting by moving the Carriage back and forth while pulling the cord lightly downward with your hand for the desired length. Cord knitting can be achieved in this manner.

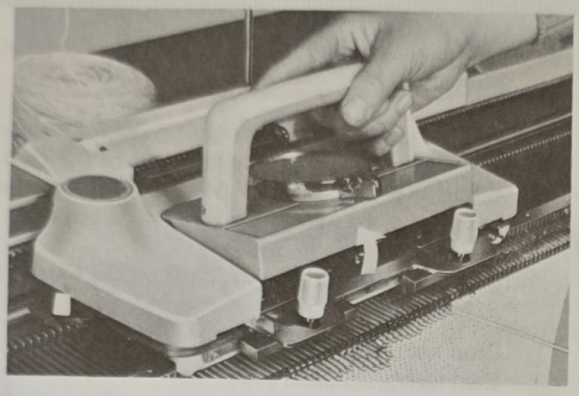
8. HELPFUL HINTS



If the Carriage has jammed while knitting.

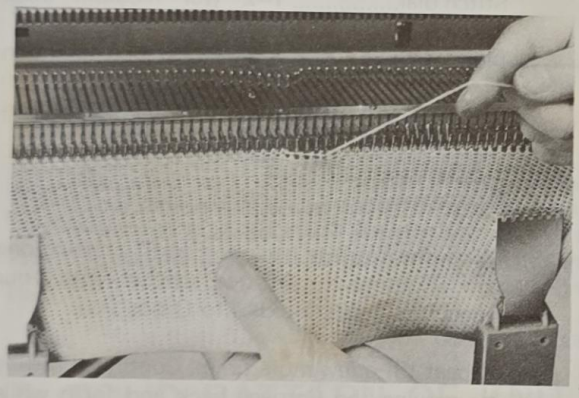
If the Carriage jammed while knitting, follow the instructions mentioned below, do not move it by force.

(1) Loosen the Arm Nuts and pull the Arm towards you.



(2) By lifting the Handle backward the centre part of the Carriage will be raised. Advance the Carriage continuing to hold it in that position. Replace the Arm.

* If the stitches have exceeded the latch position, bring them back to B position using a Transfer Tool.



How to repair incorrect knitting.

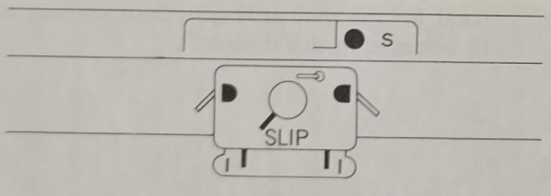
《1》 In Stockinet.

* Attach Weights at intervals on the garment so it will hang firmly. Holding the garment downward with the left hand, pull the yarn parallel with the machine for a tight row, then pull in an upward and backward motion to open the latches. Repeat this procedure for each row unraveled.
Push needles back to B position firmly when unravelling to prevent dropped stitches.

(1) If the Carriage is on the opposite side of the yarn after ripping out the rows, set the controls as follows:

Cam lever ..... Slip
Side levers ..... ● (Both)
R.C. lever ..... Inside

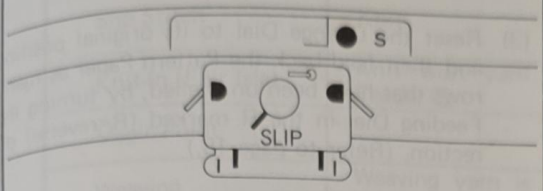
Move the Carriage to the side with the yarn.



(2) Turn the Row Counter back the number of rows unraveled. Reset the Cam Lever and the Row Counter to working position and continue knitting.

How to memorize the Pattern.

Stop knob..... ●
Cam lever.....Slip
Side levers..... ■ (Both)
R.C. lever.....Inside
L knob.....S



Set the parts on the Carriage as above and move it to the yarn side. If the Carriage is on the same side with the yarn, move the Carriage across the needle bed two times.

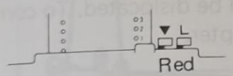
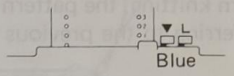
《2》 In pattern knitting.

This machine memorizes the pattern which you desire from the Punch Cards. Slide the Carriage across the needle bed once and the pattern is imprinted in the memory bank. As the Carriage is moved across the brain, remembering the pattern, knits it and at the same time is ready to knit the next row. If the pattern is wrongly read correct it as follows:

(1) Rip out as many rows as needed to repair the knitting, then line the needles in B position.
(2) Turn the Punch Card and the Row Counter back by the number of rows unravelled.
(3) Set the Stop Knob and controlling parts on the Carriage as shown in the diagram on the left, and operate the Carriage to memorize the pattern of the next row. (The Carriage will pass without knitting.)
(4) Reset the Stop Knob to the ▼ mark and the controlling parts on the Carriage and continue knitting.

Note:* When patterns are knit with Stop Knob set to the ● mark, repair it in the same manner as Stockinet knitting.

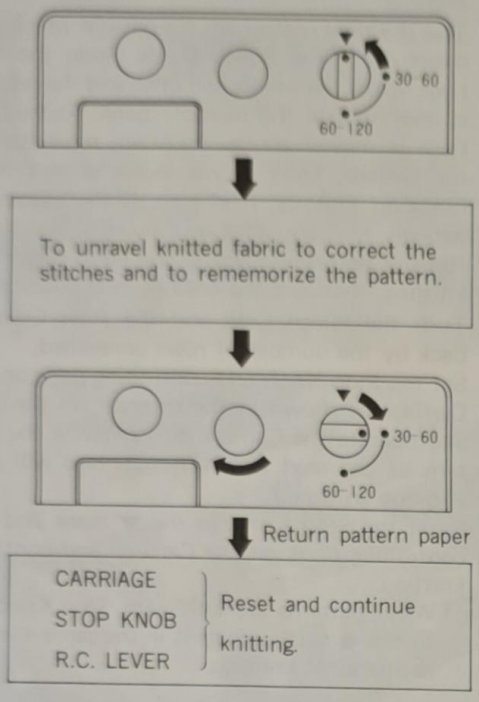
(Rows to return Punch Card)

* L indicator is Red.		* L indicator is Blue.	
			
Rows Unravelled.	Rows to return punch card.	Rows Unravelled.	Rows to return punch card.
1	1	1	0
2	1	2	1
3	2	3	1
4	2	4	2
5	3	5	2
6	3	6	3
7	4	7	3
⋮	⋮	⋮	⋮

《3》 When the Every-Other Row Feeding Mechanism is in use.

(1) Unravel as many rows as required and align the needles in B position.
(2) According to the number of rows unravelled the Punch Card should be returned as shown in the table on the left. But special attention is needed for returning the Punch Card as the number of returning rows differs according to the colour of the L indicator.
(3) Referring to "How to memorize the Pattern" memorize the pattern for the next row.
(4) Turn back the Knit Contour Pattern Paper the same number of rows as the rows unravelled.
(5) Reset the Stop Knob to the ▼ mark, the Row Counter Lever to be in action and the regulating parts of the Carriage to their original settings, then continue knitting.

N.B. The L knob should be positioned in the L mark.



⟨4⟩ In using the Knit Contour:

(1) Set the Change Dial on the Knit Contour to the ▼ mark before unravelling the required number of rows and re-memorizing the pattern.

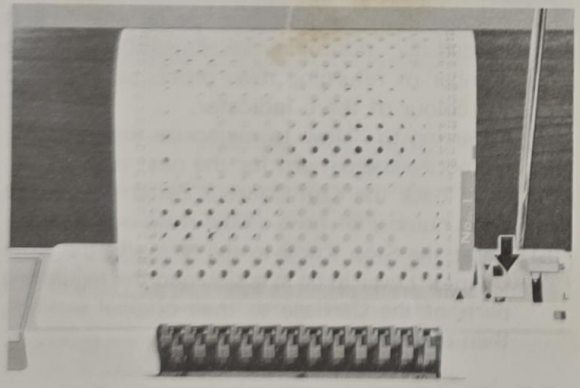
(2) Unravel the required number of rows on the fabric in order to repair the knitting. (Refer to the previous page.)

(3) Reset the Change Dial to its original position and then feed back the Pattern Paper as many rows that have been unravelled, by turning the Feeding Dial in the R marked (R=reverse) direction. (Refer to page 18.)

(4) Reset the Stop Knob, Row Counter Lever and controlling parts of the Carriage to their original positions and continue knitting.

When the Carriage is Accidentally Pulled Off the Rail in the Middle of Pattern Knitting.

If the Carriage is pulled off the rail in the middle of pattern knitting, the pattern will be dislocated. To correct this mistake, renew the memory to the memory bank referring to the previous chapter.



(The Relation between the Punch Card and the Touch Levers.)

* If the Stop Knob is set to the ● mark, the pattern on the Punch Card is shown by the Touch Levers. This pattern will be knit when the Carriage is moved across.

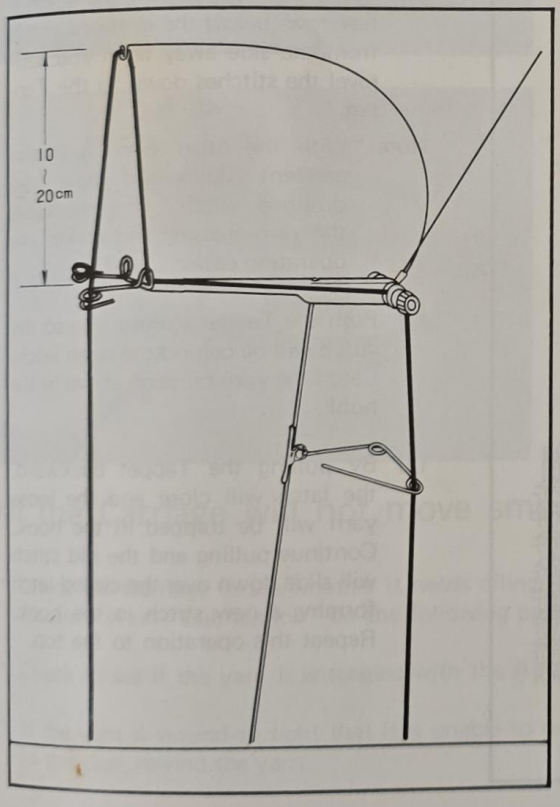
* If you want to see the pattern of the last row, return the Punch Card by one memory number and set the Stop Knob to the ● mark. The pattern on the row will be shown by the Touch Levers.

Note: * If the Stop Knob is set to the ● mark the Feeding Dial will not operate.

Relation between Touch Levers and Stitch Types in each form of Knitting.

Operation of Touch Lever / Stitch Type	Perforated area of Punch Card (Touch Levers rise) needles come out.	Unperforated area of Punch Card (Touch Levers lower) needles go back.
Tuck Stitch	Knit	Tucked. (Non-Knitting, yarn is over the hook)
Slip Stitch	Knit	Slipped. (Non-Knitting, yarn crosses in front)
Knit-in (Fair Isle)	Knit with yarn in Yarn Feeder ②	Knit with yarn in Yarn Feeder ①
Magic Point	〃	〃
Weaving	Weaving yarn is threaded above.	Weaving yarn is threaded below.
Punch Lace	Knit with nylon thread	Knit with nylon thread & yarn together.
Lace Knitting	Knit	Tucked

Note: * When knitting the Magic Point only the needles covered by the Point Cams respond to the Punch Card.



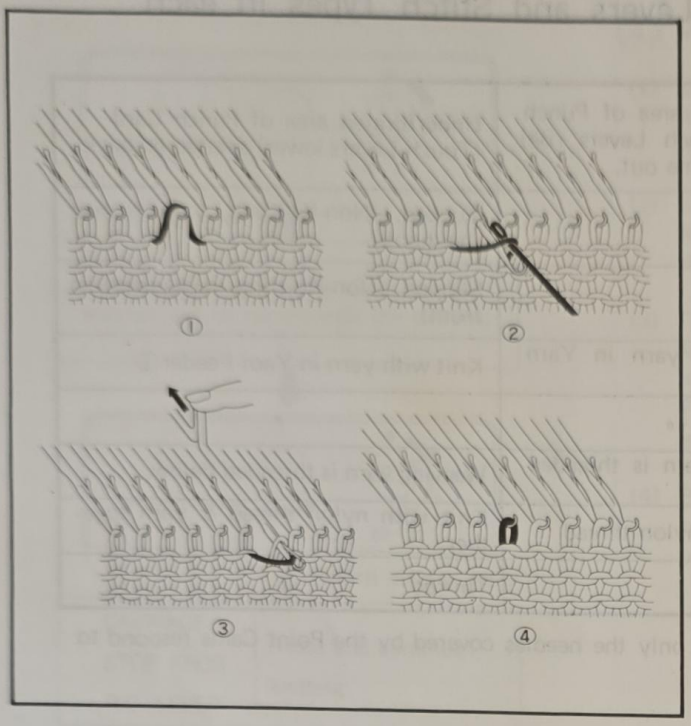
*If the yarn gets loose or entangled at the edge of fabric. *

* **Loose yarn.**

Check to see if the yarn is correctly threaded through the Auto-Tension. Be sure that the Tension Dial is correctly adjusted. (Refer to page. 4)

* **Entangled yarn.**

If the yarn is entangled in any part of the machine, or if the yarn does not pull smoothly from the yarn ball it will prevent proper operation for the machine. Therefore, the yarn should be prepared in good condition and the machine cleared of disorder while knitting.



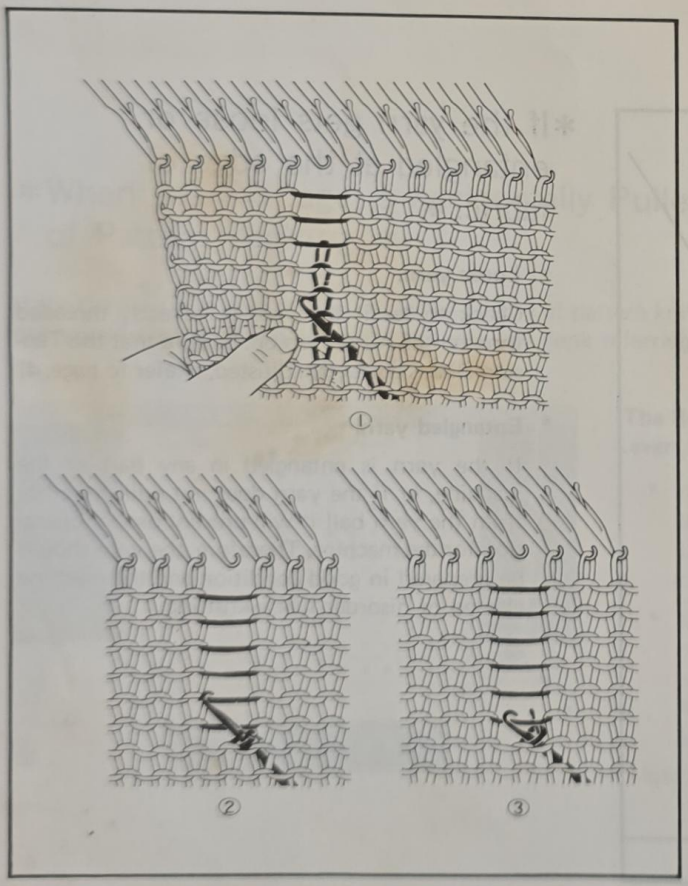
How to Correct a Dropped Stitch While Knitting

1. Correcting a dropped stitch.

(1) Insert a one eye Transfer Tool into the stitch below the dropped stitch, and replace the stitch into the hook of the needle together with the loose yarn.

(2) Slowly pull the needle out until the stitch is behind the open latch leaving the loose yarn in the hook.

(3) Push the needle back so the latch will close and the stitch behind will slide over the hook reforming a stitch as shown in ④.



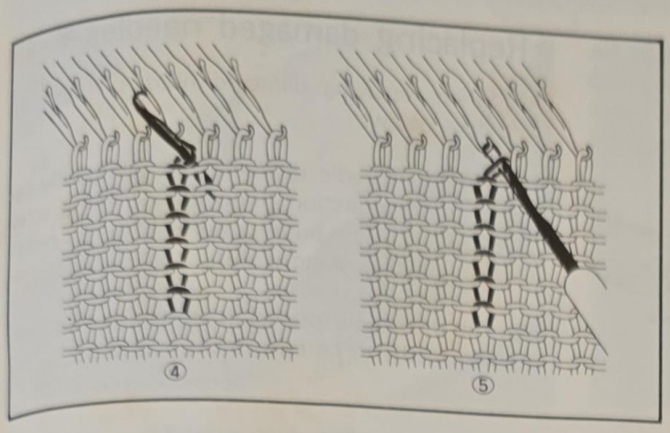
2. Correcting a dropped stitch for several rows.

(1) Insert the Tappet into the stitch a few rows below the dropped stitch from the side away from you. Unravel the stitches down to the Tappet.

Note:* With the other hand, pull the garment downward near the dropped stitch. This separates the yarn crossing and makes the operation easier.

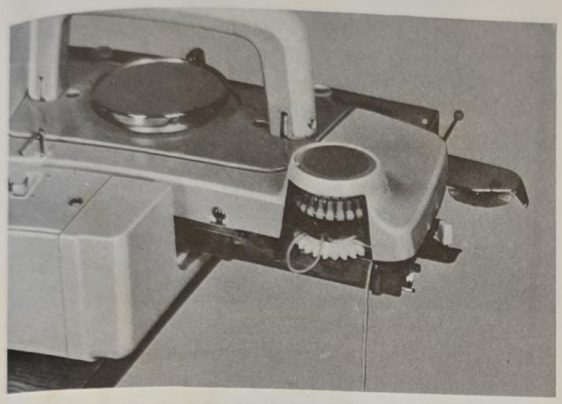
(2) Push the Tappet toward you so the stitch will be behind the open latch. Catch the yarn crossing above in the hook.

(3) By pulling the Tappet backward, the latch will close and the loose yarn will be trapped in the hook. Continue pulling and the old stitch will slide down over the closed latch forming a new stitch in the hook. Repeat this operation to the top.



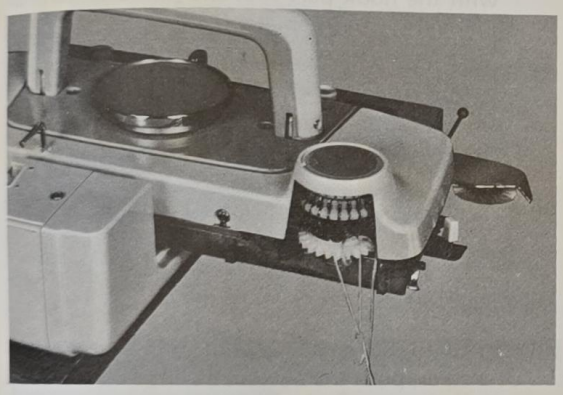
(4) Repeat this manner until reaching the end row.

(5) Pull the last loop rather tight and remove the Tappet. Insert the Tappet into the stitch from your side and put it onto the needle.



*If the yarn is entangled in the "Memory Bank". *

(1) If the yarn is entangled on the gear wheel of the "Memory Bank" shift the Carriage to the side of the machine as illustrated.



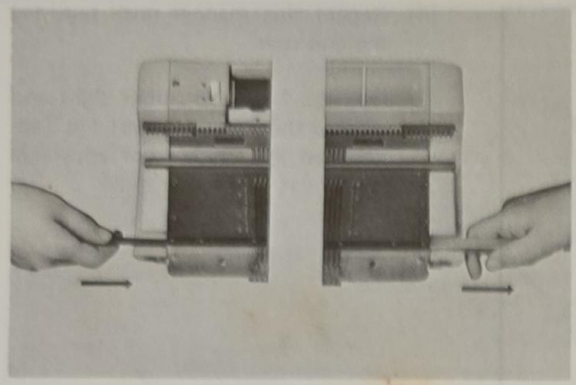
(2) Carefully disentangle the yarn using a Tappet.

*If the Carriage will not move smoothly. *

* Check the Carriage to see whether it needs oiling. If so, or if the Carriage is dirty, lubricate it referring to the section on "Lubrication" on the following page.

* Check to see if the yarn is entangled with the Auto-Tension guide.

* If the yarn is wound so tight that it is unable to unwind properly, the Carriage will not move smoothly. In this case, rewind the yarn.

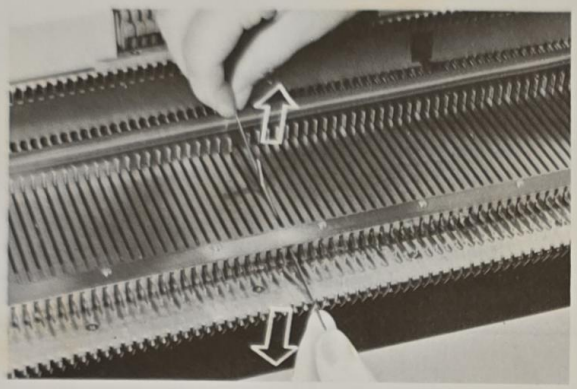


*Replacing damaged needles *

When replacing damaged needles, follow the steps below.

(1) Push the needle retainer under the needle bed in either direction using a pencil or a screw driver. Try to push upward along the needle bed when pushing it out.

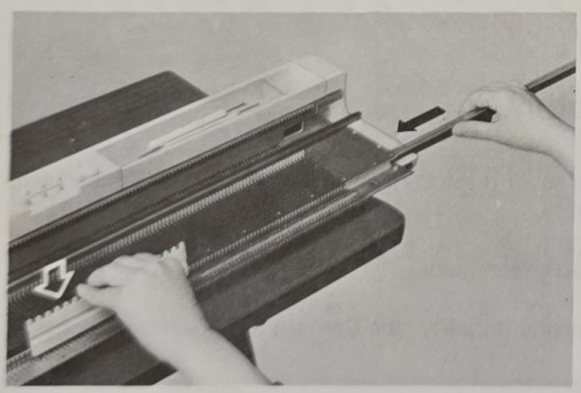
(2) Pull the needle retainer at one end until it clears the needle to be replaced.



Note: If the Separators are in use, remove them before taking out the Needle Retainer.

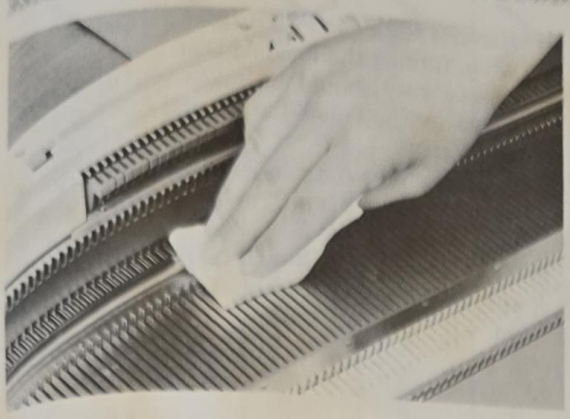
(3) Bring the damaged needle to D position. Close the latch and push the hook downward. The shank will come out of the needle bed. Pull the needle out of the needle bed lifting the shank upward. If the needle is removed in the middle of the needle bed, it will hit the center panel. In this case, pull the shank firmly upward, then pull the needle from the bed.

(4) To install a new needle in the needle bed, hold the butt with the latch open and slip the needle with the hook part first and reversing the order of the previous paragraph (3).



(5) Replace the needle retainer. If it hits against the needles, push the needles down as illustrated. Push the needle retainer toward the edge of the needle bed so it will not go in crooked.

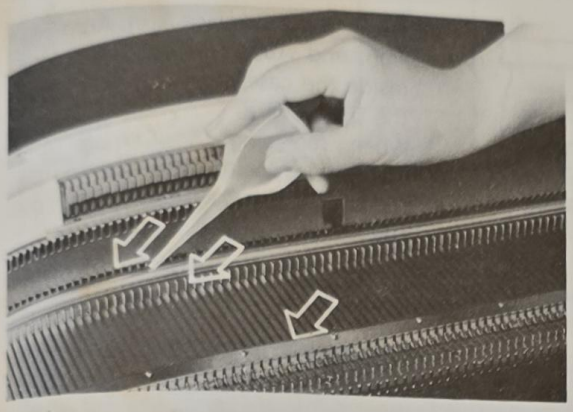
9. MAINTENANCE INSTRUCTION



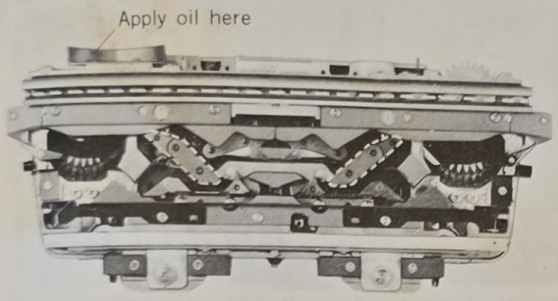
All types of machines need proper cleaning and lubrication for a long usable life. Keep this machine clean and well lubricated at all times for a happier lifetime of excellent performance.

《1》 Lubrication

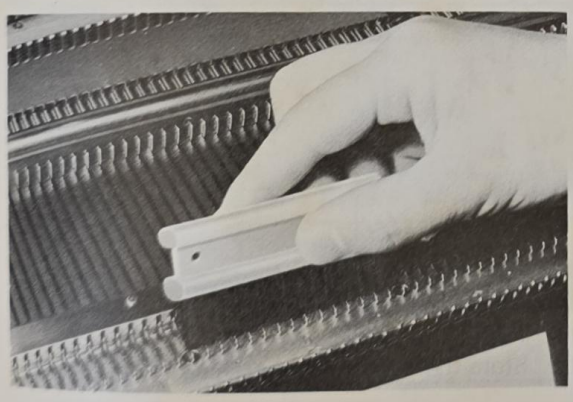
(1) Wipe the rails of back and front needle bed and the bottom of the Carriage with a dry cloth.



(2) Apply lubricant to a clean cloth, wipe with the oiled cloth across the needle bed rail and the needle butts from left to right and right to left. Remember, excessive oil is not required.



(3) Wipe the places indicated by the dotted line in the diagram with a piece of oiled cloth.



《2》 After using the machine.

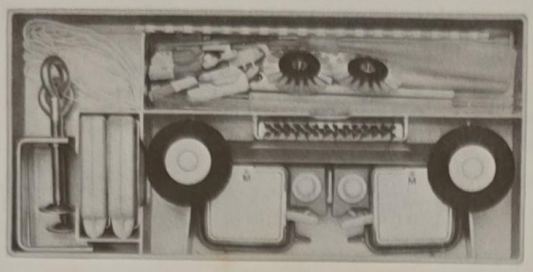
(1) Use the accessory Brush to remove the yarn lint from all parts of the machine.

(2) Carefully wipe all the metal parts with an oiled cloth to remove lint and dirt.

(3) The case can be cleaned by wiping with a piece of soft cloth saturated with synthetic detergent.

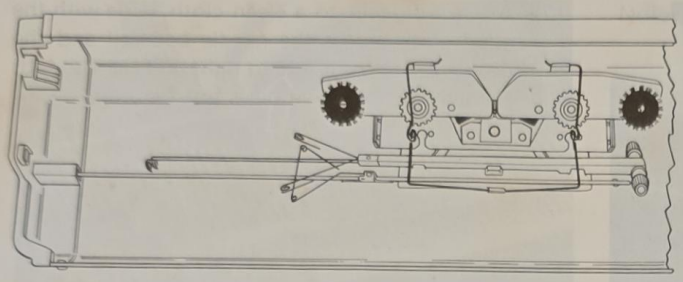
(4) It is very important to store the machine in a dry place when it is not in use.

10. HOW TO REPACK THE MACHINE

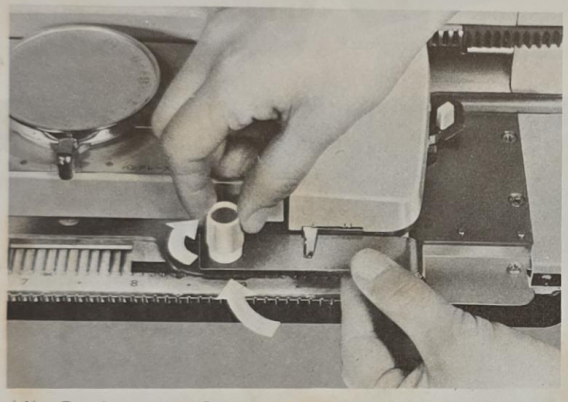


(1) Remove the Punch Card from the Centre Panel while turning the Feeding Dial.
* Special care should be taken not to make a crease on the Punch Card.

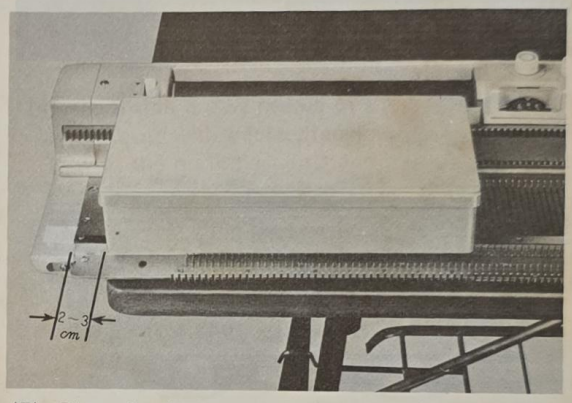
(2) Replace all the Accessories in the Accessory Box in an orderly manner as they were originally packed.
* The Weaving Arm should be placed in the correct position so the brushes will not be damaged.



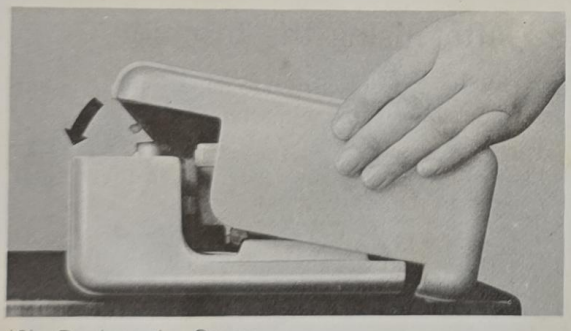
(3) Replace the Carriage Arm, Auto-Tension, and Auto-Tension Rod orderly inside the case cover and fasten with the spring wire.
When replacing the Carriage Arm place it in position by inserting the top part of the Carriage Arm into the key shaped catch from underneath.



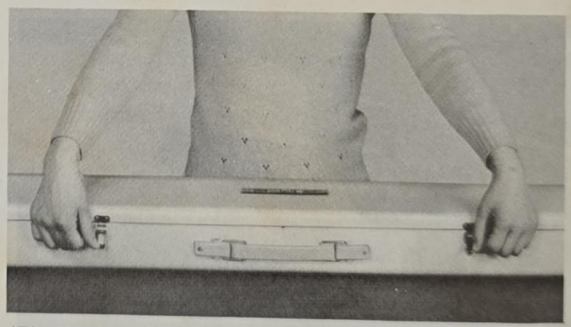
(4) Replace the Carriage Fastener to lock the Carriage securely and fold the Carriage Handle.



(5) Place the Accessory Box on the right-hand side of the needle bed 2–3 cm (3/4–1") from the end.



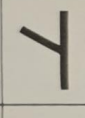
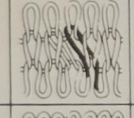
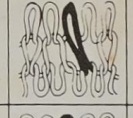
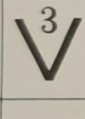
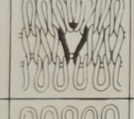
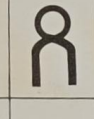
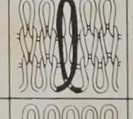
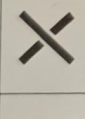
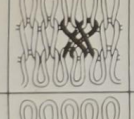
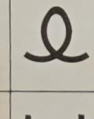
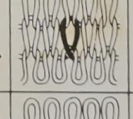
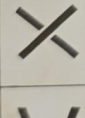
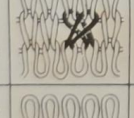
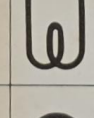
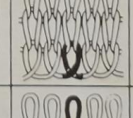
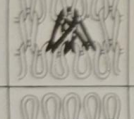
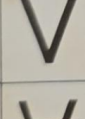
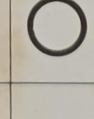
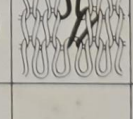
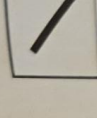
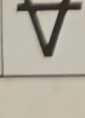
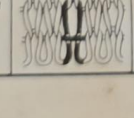
(6) Replace the Cover.



(7) Fasten the latches.
(8) Store the well cleaned machine in a dry place.

KNITTING SYMBOLS

The following set of symbols has been adopted to help you understand your patterns at a glance and to save countless lines of description on each stitch.

		KNIT STITCH Face loop of stockinet			LEAN STITCH TO THE LEFT Transfer the stitch to the left			TUCK STITCH A few loops on marked rows pulled up onto one needle
		PURL STITCH Back loop of stockinet			INCREASED STITCH TO THE RIGHT Increase one stitch to the right			TUCK STITCH IN SIDEWAY TO THE RIGHT A few loops on marked rows pulled up in sideway onto a right needle
		TWO STITCHES TOGETHER Transfer right stitch to adjacent left needle			INCREASED STITCH TO THE LEFT Increase one stitch to the left			TUCK STITCH IN SIDEWAY TO THE LEFT A few loops on marked rows pulled up in sideway onto a left needle
		TWO STITCHES TOGETHER Transfer left stitch to adjacent right needle			THREE STITCHES INCREASED Increased three stitches out of one stitch			TWISTED TUCK STITCH A stitch twisted and pulled up onto a needle above
		THREE STITCHES TOGETHER Center stitch on top of the left and right stitches			CROSSING, RIGHT OVER LEFT Cross the stitches with the right stitch over the left			TWISTED STITCH A stitch is twisted
		THREE STITCHES TOGETHER Right stitch on top			CROSSING, LEFT OVER RIGHT Cross the stitches with the left stitch over the right			WINDING STITCH A loop formed by winding yarn around a needle
		THREE STITCHES TOGETHER Left stitch on top			SLIP STITCH A loop marked is pulled up with yarn across behind it			HOLE A hole made by transferring the stitch to the next needle
		LEAN STITCH TO THE RIGHT Transfer the stitch to the right			FLOAT STITCH A loop marked is pulled up with yarn across in the front			

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